Indurent Park

Phase 6a, 6b & 7

Chemical Validation Report

Indurent Park, Newport

Phase 6a, 6b and 7

Chemical Validation Report

for

Indurent Ltd.

July 2025

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1.0 Introduction

1.1 Terms of Reference

Rodgers Leask Ltd (RLL) were commissioned by Indurent Ltd. to prepare a Chemical Validation Report following the remediation of Phase 6a, 6b and 7 (which comprises Units 11, 12 and 14 -18) of Indurent Park, Newport (hereafter referred to as the 'Site'). Indurent Park, Newport forms part of the wider mixed use redevelopment on the former Llanwern Steelworks. The Site location is shown on RLL drawing 17480-RLL-23-XX-DR-O-1213, included in **Appendix A**.

In July 2024 the Client, St Modwen Logistics merged with Industrials REIT and rebranded to be called Indurent Management Limited. The former St Modwen Park, Newport was in turn re-named Indurent Park, Newport. Any reference to the previous company name or previous estate name in this report should be referred to accordingly.

This report should be read in conjunction with the Glan Llyn Remediation Strategy (18669-RLL-21-XX-RP-O-0157), the Phase 6a, 6b and 7 Remediation Strategy (17480-RLL-24-XX-RP-O-1256-P02) the Glan Llyn: Soils Validation Strategy for Protection of Controlled Waters (30937 R2), and the Phase 6a, 6b and 7 Earthworks Specifications (17480-RLE-20-RP-O-1059-A and 17480-RLL-23-XX-RP-O-1210-P02). The relevant earthworks performance criteria have been included in this validation report for ease of reference.

1.2 Objectives

In accordance with the requirements of Planning Condition 28 of Outline Planning Permission Reference 06/0471, this report has been prepared to verify that the Phase 6a, 6b and 7 remediation works, undertaken in two phases between 2021 and 2025, were completed in general accordance with the relevant Earthworks Specification, the Glan Llyn: Soils Validation Strategy for Protection of Controlled Waters, the RLL Remediation Strategy and the Phase 6a 6b and 7 Remediation Strategy.

The first phase of earthworks was undertaken between June 2021 and January 2022 by ACS Construction Group and addressed the remedial requirements set out in the Earthworks Specification. The second phase of earthworks were undertaken between March 2025 and June 2025 by McCarthy Contractors (Bridgend) Ltd and included the uplift of the formation platform level.

1.3 Proposed Development

It is understood that the Site is proposed to be redeveloped for a commercial end use comprising seven units (Units 11, 12 and 14 - 18) with associated parking and external yard areas.

An illustrative masterplan for the site and the wider business park (Roberts Limbrick Ltd Drawing 10317-011-RLA-25-XX-DR-A-0001J) is presented in **Appendix A**.

1.4 Purpose

This report has been prepared pursuant to the partial discharge (P1 - pre-construction stage) of Planning Condition 28 of the Outline Planning Permission Reference 06/0471 for the proposed development of commercial development Phase 6a, 6b and 7 as part of a wider mixed-use development at Llanwern, Newport.

Planning Condition 28 states the following:

Prior to the commencement of each phase of development as defined by Condition 03 (that is any development excluding that required as part of the remediation strategy), unless an alternative timescale for the component parts of that phase and/or for specific remediation works has firstly been agreed in writing by the Local Planning Authority, a verification report demonstrating completion of the works set out in the approved remediation strategy for that phase (or each part of the phase if an alternative timescale has been agreed by the Local Planning Authority for the component parts) and the effectiveness of the remediation shall be submitted and approved, in writing, by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan for that phase to demonstrate that the site remediation criteria has been met. It shall also include any plan for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action, as identified in the verification plan, and for the reporting of this to the Local Planning Authority.

Reason: To demonstrate that the remediation criteria elating to controlled waters have been met and (if necessary) to secure longer-term monitoring of groundwater quality. This will ensure that there are no longer remaining unacceptable risks to controlled waters following remediation of the site and in the interests of commerical amenities and human health.

A non-material amendment has been made to the planning permission 06/0471, to allow for a phased approach to the discharge of Condition 28, where development and housebuilder requirements have been clearly divided. PC28-1 relates to pre-construction stage validation, and PC28-2 relates to the construction stage validation.

The report has been produced pursuant to the partial discharge of PC28 relating to the interim state of remediation following pre-construction stage works (PC28-1). This will include chemical validation reports covering risk to human health and risk to controlled waters for pre-construction remedial works demonstrating that these works be undertaken in accordance with the approved Remediation Strategy and the Glan Llyn: Soils Validation Strategy for Protection of Controlled Waters.

To discharge PC28 in full for each phase, the future developer, undertaking the construction phase, will be required to provide suitable documentation to demonstrate that the construction phase remedial works (PC28-2) have been completed to a satisfactory condition.

1.5 References

The following documents have been referred to in the preparation of this report:

- Phase 6a 6b and 7 Desk Study & Phase 2 Geo-Environmental Assessment, ref 17480-RLL-23-XX-RP-O-1224 P03, dated April 2025 (**Ref. 1**)
- Glan Llyn Llanwern (Sitewide) Detailed Quantitative Controlled Waters Risk Assessment (CWDQRA) 2017, Atkins, 5111373-LLA-OUT-0257 Rev. 3.0, February 2017 (**Ref. 2**)
- St Modwen Park, Newport, Earthworks Specification, RLE, ref. 17480-RLE-20-RP-O-1059-Rev A, dated March 2021 (**Ref. 3**)
- Indurent Park, Newport, Phase 6a Reinstatement Earthworks Specification, RLL, ref. 17480-RLL-23-XX-RP-O-1210-P02, dated October 2024 (**Ref. 4**)
- Phase 6a, 6b & 7 Remediation Strategy, RLL, ref. 17480-RLL-24-XX-RP-O-1256-P02, dated April 2025 (**Ref. 5**)
- St. Modwen Park, Newport, Phase 6a, 6b and 7 Geotechnical Assessment Report, RLL, ref. 17480-RLL-23-XX-RP-O-1226-P01, dated October 2023 (**Ref. 6**)
- Indurent Park, Newport, Phase 6a, 6b – Earthworks Validation Update, RLL, ref. 17480-RLL-25-XX-RP-O-1303-P01 (**Ref. 7**)
- Former Llanwern Steelworks Site Assessment of Asbestos Contamination, The Institute of Occupational Medicine (IOM), 610-34464, March 2014 (**Ref. 8**)
- Glan Llyn Remediation Strategy Addendum Information, RLL, ref. 18669-RLL-22-XX-RP-O-0192, dated January 2022 (**Ref. 9**)
- Glan Llyn: Soils Validation Strategy for Protection of Controlled Waters Hannah Fraser Consulting Ref. 30937 R2, dated December 2024 (**Ref. 10**)
- Glan Llyn CWDQRA (2019 update), RLL ref. 18669-RLL-19-XX-RP-O-0006_Rev A, dated June 2022 (**Ref. 11**)

1.6 Limitations and Confidentiality

All conclusions and recommendations made within this report are based on and limited to the factual information obtained as part of these works. No responsibility can be taken by RLL for information obtained by third parties and it has been assumed that all third-party information provided is true and correct.

RLL has undertaken the work in accordance with our understanding of current best practice at the time of undertaking the work. Further assessment and revision of this report may be required should new information come to light or legislation/ changes to best practice be introduced after the date of issue of the report.

RLL has prepared the report for the sole use and reliance of the Client. The report may not be used or relied upon by any unauthorised third party without the explicit written agreement of RLL.

The interpretive work undertaken within this report remains the intellectual property of RLL and must not be divulged to any commercial third party without prior written agreement of RLL.

2.0 Site Characteristics

2.1 Site Location and Description

The Site is located within Indurent Park Newport, at the former Llanwern Steelworks, Newport, Wales. The Site is approximately 6km to the east of Newport city centre at approximate National Grid Reference 337034E, 486839N. The wider business park covers approximately 50 hectares and is proposed to be redeveloped for commercial use. The site location plan (Drawing 17480-RLL-23-XX-DR-O-1213) is included in **Appendix A.**

The Site covers an area of approximately 11 ha and is located in the north-central part of the wider business park. The Site is irregular in shape at an undulating level typically between 4.00mAOD and 7.00mAOD east to west.

2.2 Site History Summary

Historically, the Site exclusively comprised agricultural land segregated into parts of ten fields by hedgerows, reens, drains and non-coniferous trees. From 1967, the Site formed part of the Spencer Steelworks (later known as the Llanwern Steelworks), with all fields and reens removed. During the steelwork's operational years, the Site housed a large steel plant its eastern side, a canteen located in the north-eastern corner and railway sidings entering the plant from the north. A Blast Furnace Plant comprising numerous pipelines, conveyors, chimneys, tanks and part of two cooling towers was located on the western part of the Site, with a slag pit located to the south of these structures. The Site was partially demolished by 2004 and fully demolished by 2021 (**Ref. 1**).

2.3 Ground Conditions and Contamination Summary

Historical and recent ground investigations undertaken prior to the remediation works, summarised in the RLL desk Study and Phase 2 Report (**Ref. 1**), generally identified the following conditions across the Site:

- Made Ground from ground level or below surfacing (tarmac and concrete) or topsoil to a maximum recorded depth of 5.30m. It generally comprised gravelly CLAY, loose gravel and cobbles, sandy cobbly GRAVEL or fused to semi-fused slag GRAVEL. Gravels and cobbles typically consisted of mudstone, sandstone, brick, concrete, blast furnace slag, metal rebar, coke, steel slag, iron ore, clay pipe and occasional wood or lenses of tarmac.
- Tidal Flat Deposits were encountered underlying the Made Ground from a minimum of 0.50m to a maximum encountered depth of 12.00m. It generally comprised soft-firm blue occasionally peaty, silty CLAY, or soft, brown fibrous PEAT and black to dark brown, silty, clayey PEAT observed in one location.
- The Mercia Mudstone Group was encountered underlying the Superficial Deposits from 9.50m to a maximum encountered depth of 12.00m. It was generally described as very stiff, silty CLAY and extremely weak, MUDSTONE/SILTSTONE.

Seven locations refused or terminated within the Made Ground at depths ranging from 1.20m to 4.50m. Refusals were generally due to fused slag, hard ground or pig iron plate. Buried obstructions were encountered in thirty-seven locations ranging from depths of 0.00m to 4.70m within the Made Ground and typically comprised concrete piles, concrete substructures, occasional boulders of concrete, pig iron plates, timber sleepers, steel pipes, fused slag and rebar. Two of the obstructions also extended into the Tidal Flat Deposits and consisted of a concrete wall and potential lime stabilisation.

Isolated sheens or hydrocarbon odours were encountered in sixteen locations in the Made Ground on Site from depths ranging from depths of 0.60m to 3.00m.

Chemical analysis of 227 samples taken during previous ground investigations and no exceedances of the relevant assessment criteria for a commercial end use were recorded. Asbestos was identified in 34 samples of the 165 analysed, identifying Chrysotile and Amosite asbestos at concentrations of <0.001% to 0.088% w/w.

Perched groundwater was encountered in 49 locations, typically within the Made Ground from 0.50m to 4.60m and Tidal Flat Deposits at depths from 1.30m to 9.10m.

According to the Atkins DQCWRA (**Ref. 2**) regional groundwater is typically encountered within a gravelly fine to coarse sand at approximately 9mbgl towards the base of the Tidal Flat Deposits. The groundwater is typically sub artesian, confined by the clay rich Tidal Flat Deposits at approximately 9mbgl, with a rest water level of approximately 2mbgl.

3.0 Enabling Works

3.1 Earthworks Summary

During previous intrusive ground investigations on Phase 6a, 6b & 7, the Made Ground was found to contain numerous buried obstructions including structures and buried fused slag, pig iron plates. As such, remedial earthworks were required.

Remedial earthworks were undertaken in two separate stages; the first by ACS Earthworks Ltd and the second by McCarthy Contractors (Bridgend) Ltd.

The first stage of earthworks was completed between June 2021 and January 2022 by ACS Construction Ltd and comprised the turnover of the Made Ground to a minimum of 5.30mAOD. Where obstructions or fused slag was encountered in the excavation, it was locally extended to remove obstructions in their entirety. Any piles, if present, were cropped to the base of excavation.

Material was then engineered and compacted in accordance with the RLE earthworks specification (**Ref. 4**) to approximately 7.25mAOD in the southern half of the Site. The northern half of the Site was left at a lower level of approximately 6.70mAOD to accommodate arisings from the first build phase.

The first phase of the earthworks generally comprised:

- Site clearance;
- Excavation of Made Ground to 5.30mAOD or natural underlying Tidal Flat Deposits;
- Removal of Made Ground from site with evidence of gross visual and olfactory contamination;
- Removal of below ground obstructions including, but not limited to, concrete obstructions and hard fused slag;
- Cropping of piles to a minimum of 5.3mAOD, or the base of excavation;
- Re-engineering of Made Ground;
- In situ geotechnical testing;
- Soft spot excavation/ removal; and
- Monitoring for compliance with relevant specifications.

The second stage of the earthworks was undertaken by McCarthy Contractors (Bridgend) Ltd between March 2025 and June 2025 and comprised the remaining uplift work at the northern part of the Site. These works involved the uplift of material to raise the formation levels to 7.25mAOD, utilising arisings from the build phase of Units 8-10 in accordance with the RLL earthworks specification (**Ref. 5**).

Both phases of remedial earthworks were undertaken in accordance with the RLL Remediation Strategy (**Ref. 9**).

The purpose of the reclamation works was to uncover and, where possible, remove existing obstructions that may pose a potential constraint to the proposed development before reengineering material to the formation level. Made Ground was trimmed to a level of ≤5.30mAOD, at this level visible obstructions were chased

out and removed; piles were retained and cropped to ≤5.30mAOD at the base of the excavation.

The turnover also allowed for the removal of unsuitable material with evidence of visual and olfactory contamination.

The Site required a turnover of approximately 70,000m^3 of Made Ground, a base of excavation survey was then completed as shown in ACS Drawing ACS-SMPN-S3-BOE-1 (**Appendix A**). Retained supporting piles and exceptional obstructions are shown on ACS Drawing ACS-SMPN-S3-OBS-1, also presented in **Appendix A**.

Including the adjacent unit 8 – 10 area, approximately 300,000m^3 of fill material was required to achieve a final formation level of 7.25mAOD across the Site. Of this, approximately 19,000m^3 was placed during the second phase of the remedial earthworks, with the general fill material sourced from the arisings generated in the construction of Units 8-10 build phase.

Including the adjacent Unit 8 – 10 area, approximately, 200,000m^3 of stockpiled site won material and approximately 30,000m^3 of excavated material was imported from the wider Glan Llyn development. Chemical testing of the material used on site is presented in Section 4.0. Drawing 17480-RLL-25-XX-DR-O-1325-P01 (**Appendix A**) shows the source of materials utilised as part of the fill placement.

The reengineering of the material to create a low permeability layer of Made Ground is in accordance with the Remediation Strategy (**Ref. 5**).

In accordance with the RLL Earthworks Specifications (**Ref. 3 & 4**) the material was used to achieve the formation level of 7.25mAOD. The material was reengineered to achieve 95% compaction and <10% air voids. The Site is >600mm below the proposed final levels, to allow for placement clean cover.

The completed earthworks topographical survey is shown on the McCarthy Contractors (Bridgend) Ltd drawing 'As Builts 6A 6B Uplift' Rev A, both in **Appendix A**.

3.2 Geotechnical Assessment

Geotechnical validation of the earthworks comprised geotechnical sampling, California Bearing Ratio (CBR) testing, Electronic Soil Density Gauge (SDG) Non-Nuclear Testing, and expansivity testing of the slag material. The appropriate compaction of the material is relevant in terms of limiting/ reducing the permeability to support the Remediation Strategy.

296 particle size distribution tests were undertaken on samples of the fill material used within the Site. The results indicate that the fill comprised slightly clayey sandy Gravel with occasional cobbles. Samples were classed 1B – uniformly graded granular material (≤15% fines) which is a General Granular Fill or 2C stony cohesive material (>15% fines).

Table 3.1 and Table 3.2 summarise the relevant performance criteria for material compaction set out in the earthworks specification for phases 1 and 2 of the

remedial earthworks and the in-situ test results recording compliance in accordance with the Earthworks Specification.

Table 3.1. Phase 1 Remedial Earthworks Relevant Earthworks Performance Criteria & Validation Results				
Test	Required Limits		In-situ Results **	
	Min	Max	Min	Max
6a, 6b & 7 Compound (June 2018 and February 2021)				
Moisture Content (%)	6.90*	19.00*	2.00	24.00
Maximum Dry Density (Mg/m^3)	1.86*	2.32*	1.23	2.24
Degree of Compaction	>95% (Maximum Dry Density)		63.9%	110.0%
Air Voids Ratio **	<10%		-50.1%	15.1%
CBR Tests	Target 5%, Minimum 2.5%		4.0%	54.0%

1346 of the 1429 EDG tests for the phase 1 remedial earthworks achieved 95% or greater relative compaction and all but one test achieved the minimum 90% or greater relative compaction. One sample (P13-Layer 2) achieved a relative compaction of less than 90%, with a result of 63.9%.

1344 in-situ BS1377-2 moisture content tests were undertaken during the material placement, with a recorded moisture content range of 2.0% to 24.0%. 138 tests achieved a moisture content of greater than 19.0%, and 1 test achieved a moisture content lower than 6.9% (G16-Layer 7) of 2.0%.

The equivalent California Bearing Ratio (CBR) values for all 200 tests were in excess of the minimum 2.5% value.

Table 3.2. Phase 2 Remedial Earthworks Relevant Earthworks Performance Criteria & Validation Results				
Test	Required Limits		In-situ Results **	
	Min	Max	Min	Max
6a, 6b & 7 Compound (March to May 2025)				
Moisture Content (%)	6.90*	19.00*	10.0	13.3
Maximum Dry Density (Mg/m^3)	1.86*	2.32*	1.91	2.08
Degree of Compaction	>95% (Maximum Dry Density)		93.0%	103.0%
Air Voids Ratio **	<10%		-	-
CBR Tests	Target 5%, Minimum 2.5%		7.9%	200.0%

* Taken from laboratory test results
** Soil Density Gauge (SDG)

79 of the 93 EDG tests for the phase 2 remedial earthworks achieved 95% or greater relative compaction, and all tests achieved the minimum 90% or greater relative compaction.

95 in situ BS1377-2 moisture content tests were undertaken during the material placement, with a recorded moisture content range of 10.4% to 13.3%.

The equivalent California Bearing Ratio (CBR) values for all 43 tests were in excess of the minimum 2.5% value.

3.2.1 Discussion

The results show that the appropriate compaction has been achieved and that the earthworks have been undertaken in accordance with the Earthworks Specification(s). The validation information for the earthworks was reviewed and approved as being in accordance with the earthworks specifications. More information is available in the Geotechnical Validation Report (**Ref. 6**) and the Phase 6a, 6b & 7 Earthworks Validation Update (**Ref. 7**).

4.0 Chemical Validation of Soils

4.1 General

The site-won fill material used and re-engineered to achieve the proposed formation levels was predominantly granular, comprising sandy gravel with variable quantities of clay, silt and cobbles. The gravel was described as comprising of slag, brick, quartzite and concrete.

Material was tested in accordance with the RLL Earthworks Specifications (**Ref. 3** and **Ref. 4**) and the RLL Remediation Strategy (**Ref. 5**). Chemical data was screened against the S4UL Generic Assessment Criteria for Commercial End Use.

Fill material was sampled prior to placement by RLL and Atkins during intrusive investigations between June and December 2018. Chemical testing was undertaken by Eurofins Chemtest Ltd and ALS Global Ltd.

Clay validation samples were taken from the natural deposits during the trial pitting to confirm the Tidal Flat Deposits had not been impacted by contamination.

Surface validation sampling of the re-engineered formation surface was undertaken by RLL on an approximate 50m grid at 100mm below the formation surface in June to August 2022 and May 2025. The formation surface validation sample locations are shown on RLL Drawing 18669-RLL-25-XX-DR-O-1324-P01, and the clay validation samples are shown on RLL Drawing 17480-RLL-23-XX-DR-O-1219-P01, in the trial pit locations (**Appendix A**).

4.2 Tidal Flat Deposits

146 soil samples were collected from the Tidal Flat Deposits during the previous ground investigations and sent for contamination testing. Samples were tested for heavy metals, polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbon (TPH), BTEX (benzene, toluene, ethylbenzene and xylenes), pH, soil organic matter (SOM), ammoniacal nitrogen, cyanide, phenols.

The samples were assessed against the S4UL Generic Assessment Criteria Commercial End Use screening criteria in accordance with the Remediation Strategy (**Ref. 5**). No exceedances of the criteria were recorded within the natural samples.

A summary of the laboratory chemical results, screened against relevant assessment criteria, is presented in **Appendix C**. Laboratory certificates are presented in **Appendix D**.

4.3 Fill Material

In accordance with the Remediation Strategy, a total of 933 soil samples were collected between December 2020 and January 2022 for contamination testing, all of which were taken from material used in the Phase 6a, 6b & 7 fill. Material was sourced from Indurent Park, Newport and the wider Glan Llyn site and comprised site won Made Ground. Samples were tested for heavy metals, polycyclic aromatic

hydrocarbons (PAH), total petroleum hydrocarbon (TPH), BTEX, pH, soil organic matter (SOM), ammoniacal nitrogen, cyanide, phenols and select samples were also tested for asbestos. The provenance of material reused is tracked by the sample name.

The samples were screened against the S4UL Generic Assessment Criteria Commercial End Use in accordance with the Remediation Strategy (**Ref. 5**). A summary of the laboratory chemical results is presented in **Appendix C**. Laboratory certificates are presented in **Appendix D**.

Table 4.1 summarises the exceedances of the S4UL Generic Assessment Criteria Commercial End Use criteria.

Table 4.1 Summary of exceedances of S4UL Generic Assessment Criteria Commercial End Use for the Fill Material.

Contaminant	No. of samples exceeding	S4UL Commercial (mg/kg)	Exceedances Concentration Range (mg/kg)
Lead	5 of 933 (0.54%)	2330.0	4220.0 – 7150.0
Aliphatic VPH >C8-C10	1 of 933 (0.12%)	2000.0	2110.0
Aromatic EPH >C16-C21	2 of 933 (0.21%)	3500.0	3540.0 – 4330.0
Benzo[a]anthracene	2 of 933 (0.21%)	170.0	206.0 – 358.0
Benzo[b]fluoranthene	40 of 933 (4.30%)	44.0	45.0 – 378.0
Benzo[a]pyrene	2 of 933 (3.00%)	35.0	35.7 – 303.0
Dibenz(a,h)Anthracene	70 of 933 (7.50%)	3.5	3.4 – 655.0

Asbestos was identified in 52 samples from the 360 analysed, these samples were then quantified. Results are summarised in the table below.

Table 4.2 - Summary of Asbestos Results for the Fill Material

Location	Asbestos Type	Quantification (%w/w)
2BSE-5 (0.00m)	Chrysotile (White) Asbestos	0.001

Table 4.2 - Summary of Asbestos Results for the Fill Material		
Location	**Asbestos Type**	**Quantification (%w/w)**
2BSE-37 (0.00m)	Chrysotile (White) Asbestos	N/A
3CA8 (1.00m)	Chrysotile (White) Asbestos	0.0164
3CB7 (0.90m)	Chrysotile (White) Asbestos	<0.001
3CE8 (1.00m)	Chrysotile (White) Asbestos	<0.001
3CF9 (0.50m)	Amosite (Brown) Asbestos	<0.001
3CF9 (1.60m)	Amosite (Brown) Asbestos	<0.001
3CG9 (0.50m)	Amosite (Brown) Asbestos	<0.001
3CI9 (0.50m)	Chrysotile (White) Asbestos	<0.001
40A-N26 (1.00m)	Chrysotile (White) Asbestos	N/A
40A-M28 (2.00m)	Amosite (Brown) Asbestos	<0.001
40A-E26 (1.50m)	Chrysotile (White) Asbestos	<0.001
40A-F26 (1.30m)	Chrysotile (White) Asbestos	<0.001
40A-H26 (1.20m)	Amosite (Brown) Asbestos	<0.001
40A-I26 (1.20m)	Chrysotile (White) Asbestos	0.002
40A-J27 (0.70m)	Amosite (Brown) Asbestos	<0.001
40A-J27 (1.50m)	Amosite (Brown) Asbestos	<0.001
40A-J23 (0.70m)	Chrysotile (White) Asbestos	0.0013
40A-Q21 (1.50m)	Chrysotile (White) Asbestos	<0.001
40A-O16 (0.50m)	Chrysotile (White) Asbestos	<0.001
40A-O17 (0.50m)	Chrysotile (White) Asbestos	0.0023
40A-O17 (2.00m)	Amosite (Brown) Asbestos	<0.001
40A-Q18 (0.20m)	Chrysotile (White) Asbestos	0.0015
40A-H10 (0.40m)	Amosite (Brown) Asbestos	0.0012
40A-J10 (1.00m)	Chrysotile (White) Asbestos	<0.001
40A-K11 (0.50m)	Chrysotile (White) Asbestos	0.0672
40A-K11 (2.00m)	Chrysotile (White) Asbestos	0.001
40A-I16 (0.50m)	Amosite (Brown) Asbestos	0.0012
40A-P10 (0.50m)	Chrysotile (White) Asbestos	<0.001
40A-P11 (1.00m)	Chrysotile (White) Asbestos	<0.001

Table 4.2 - Summary of Asbestos Results for the Fill Material		
Location	**Asbestos Type**	**Quantification (%w/w)**
40A-P11 (2.00m)	Chrysotile (White) Asbestos	<0.0016
3CA1 (0.50m)	Chrysotile (White) Asbestos	<0.001
3CA1 (1.50m)	Chrysotile (White) Asbestos	0.0017
3CA3 (0.50m)	Chrysotile (White) Asbestos	<0.001
3CA4 (1.00m)	Chrysotile (White) Asbestos	<0.001
3CA5 (1.50m)	Chrysotile (White) Asbestos	0.0157
3C-B3 (0.50m)	Chrysotile (White) Asbestos	<0.001
3CB2 (2.20m)	Chrysotile (White) Asbestos	0.0032
3C-E5 (2.00m)	Chrysotile (White) Asbestos	<0.001
3C-E3 (1.00m)	Chrysotile (White) Asbestos	<0.001
3C-I2 (0.50m)	Chrysotile (White) Asbestos	<0.001
3C-I2 (2.00m)	Chrysotile (White) Asbestos	<0.001
3C-J2 (1.00m)	Amosite (Brown) Asbestos	<0.001
W56-03 (0.00m)	Chrysotile (White) Asbestos	<0.001
W127-3 (0.20m)	Chrysotile (White) Asbestos	<0.001
W204-3 (0.20m)	Amosite (Brown) Asbestos	0.016
4A Comp -39 (0.00m)	Chrysotile (White) Asbestos	0.0012
W209-5 (0.20m)	Chrysotile (White) Asbestos	<0.001
W209C-3 (0.20m)	Chrysotile (White) Asbestos	<0.001
TP3B-E2 (0.50m)	Chrysotile (White) Asbestos	<0.001
TP3BF2 (2.30m)	N/A	<0.001
TP3BC5-03 (1.50m)	N/A	<0.001
TP3BD5-01 (0.30m)	N/A	<0.001

The Institute of Occupational Medicine (IOM) risk assessment report for the reuse of soils containing asbestos at Llanwern (**Ref. 8**) states that Made Ground is suitable for reuse in commercial areas if concentrations are less than 0.03% (300PPM) and 600mm of clean cover (soils with asbestos content <0.001%) is provided. The Made

Ground material will be a minimum of 600mm below finished levels based on the proposed formation levels.

4.4 Formation Surface

Following consultation with the Senior Scientific Officer at Newport City Council (NCC) additional chemical sampling of formation surface was proposed as an addendum to the Remediation Strategy (**Ref 9**). The additional sampling was undertaken in accordance with the Remediation Strategy and, in addition to the pre-remediation testing, validation samples were collected to assess the contamination status of the formation surface.

A total of 48 chemical samples were taken, following the earthworks, to assess the contamination status of the formation surface. The validation testing of the formation surface (>600mm below final ground level) was assessed against S4UL Generic Assessment Criteria for Commercial End Use screening values in accordance with the Remediation Strategy. Samples were tested for heavy metals, polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbon (TPH), BTEX, pH, soil organic matter (SOM), ammoniacal nitrogen, cyanide, phenols and half of the samples were also tested for asbestos. A summary of the laboratory chemical results is presented in **Appendix C**. Laboratory certificates are presented in **Appendix D**.

The locations of the surface validation samples are shown on RLL drawing reference 17480-RLL-25-XX-DR-O-1324-P01, in **Appendix A**.

The samples were screened against the S4UL Generic Assessment Criteria for Commercial End Use screening values in accordance with the Remediation Strategy (**Ref. 8**). The following table summarises the exceedances.

Table 4.3 Summary of exceedances of S4UL Generic Assessment Criteria Commercial End Use for the Surface Validation Samples (750mm Below Final Ground Level)

Contaminant	No. of samples exceeding	Critical Value (mg/kg)	Exceedances Concentration Range (mg/kg)
Benzo[a]pyrene	1 of 48 (2.08%)	35.0	36.0
Dibenz(a,h)Anthracene	3 of 48 (6.25%)	3.5	3.6 – 4.5

The formation surface material is >600mm below final ground levels to facilitate the provision of clean cover and appropriate construction material. As such, the pathway between the limited residual exceedances in the Made Ground and the site end-use receptors will be broken with the addition of the imported clean cover in accordance with the Remediation Strategy.

Asbestos was identified in 7 samples from the 48 analysed, these samples were then quantified. Results are summarised in the table below.

Table 4.4 - Summary of Asbestos Results for the Surface Validation Material

Location	Asbestos Type	Quantification (%w/w)
6a/6b-SV9	Chrysotile (White) Asbestos	<0.001
6a/6b-SV8	Chrysotile (White) Asbestos	<0.001
6a/6b-SV20	Amosite (Brown) Asbestos	<0.001
BP-SV22	Chrysotile (White) Asbestos	0.005
BP-SV25	Chrysotile (White) Asbestos	0.006
BP-SV36	Chrysotile (White) Asbestos	0.006
BP-SV47	Amosite (Brown) Asbestos	<0.001

The locations of recorded exceedances in surface validation samples are presented on RLL drawing reference 18669-RLL-25-XX-DR-O-1326-P01, in **Appendix A**.

4.5 Soils Contamination Summary

No exceedances were recorded within the underlying Tidal Flat Deposits.

Exceedances of lead, aliphatic VPH >C8-C10, aromatic EPH >C16-C21, benzo[a]anthracene, benzo[b]fluoranthene, benzo[a]pyrene and dibenz(a,h)anthracene were encountered in a limited number of samples taken from the fill material when compared to the S4UL Generic Assessment Criteria Commercial End Use.

Due to the recorded exceedances to the S4UL generic assessment criteria, a clean cover system will be required to break the pathway to any potential contaminants.

Asbestos was identified within 52 of the 360 fill material soil samples tested at concentrations of between <0.0010% to 0.0672%. One sample exceeded the IOM risk assessment screening criteria (40A-K11), this one sample makes up only 1 of 408 samples tested for asbestos. This source was used at significant depth beneath the formation platform and will be beneath a commercial development beneath buildings and hardstanding.

With the exception of sample 40A-K11, all measured asbestos concentrations were less than 0.03% (300PPM), the material is considered suitable for reuse in commercial areas beneath suitable inert clean cover, as per the IOM risk assessment report (**Ref. 8**).

An assessment on the risk to controlled waters will be validated in a separate validation report in accordance with the Hannah Fraser Consulting Soils Verification methodology (**Ref. 10**).

5.0 Ground Gas Assessment

5.1 Gas Monitoring

Gas monitoring was undertaken in eleven monitoring wells (6A-WS2 to 6A-WS5, 6B-WS1, 6B-WS4, BP-WS01 to BP-WS03, BP-WS07 and BPWS08) between February 2022 and July 2025 by RLL. The location of the monitoring wells are shown on RLL drawing 18669-RLL-25-XX-DR-O-1298-P03 (**Appendix A**), and the monitoring results are available in **Appendix E**.

Five to eleven rounds of gas monitoring have been undertaken between February 2022 and June 2025, dependent on when the monitoring positions were installed. The initial positions (BP-WS01 to BP-WS03, BPWS07 and BP-WS08) were installed February 2022 and the more recent positions (6A-WS2 to 6A-WS5, 6B-WS1 and 6B-WS4) were installed April 2025. A maximum methane concentration of 5.3% was recorded, and a maximum concentration of 0.6% for carbon dioxide was recorded. Low to moderate oxygen concentrations (minimum of 0.1%) was encountered across all boreholes during the monitoring period.

Low oxygen concentrations are often indicative of the presence of other gasses, or anaerobic soil conditions due to water saturated ground. Anaerobic soil conditions were likely encountered during the time of monitoring due to the thickness of engineered fill and the presence of partially flooded monitoring positions during the gas monitoring rounds.

A summary of the gas monitoring is presented in the table below:

Table 5.1 - Gas Monitoring Results Summary

Hole ID	Barometric Pressure (mb)	Peak Methane (%)	Peak Carbon Dioxide (%)	Min Oxygen (%)	Maximum Flow Rate (l/hr)
6A-WS2	1001 - 1023	2.1	0.6	0.1	0.3
6A-WS3	1001 - 1017	0.1	0.1	18.2	0.3
6A-WS4	1001 - 1019	0.1	0.1	13.2	0.3
6A-WS5	1000 - 1022	0.9	0.1	0.2	0.3
6B-WS1	1001 - 1022	5.3	0.4	5.2	0.3
6B-WS4	999 - 1019	0.1	0.1	12.1	0.3
BP-WS01	995 - 1030	0.2	0.1	15.5	0.3
BP-WS02	995 - 1030	0.1	0.1	0.6	0.3
BP-WS03	994 - 1030	3.5	0.3	0.1	0.3
BP-WS07	995 - 1029	0.2	0.1	18.7	0.3
BP-WS08	995 - 1028	0.3	0.2	0.1	0.4

*0.1% concentration value has been used on any value less than 0.1%, based on the gas analyser margin of error.
**0.3 l/hr flow has been used on any value less than 0.3 l/hr, based on the gas analyser margin of error.

GSVs were calculated for each monitoring borehole and are initially conservatively based on the peak methane and carbon dioxide readings and the maximum flow rate encountered within each exploratory hole.

Table 5.2 - Gas Screening Values

Hole ID	Max. CO_2 conc. (%)*	Max. CH_4 conc. (%)*	Maximum Flow Rate (l/hr)**	CO_2 GSV	CH_4 GSV	Borehole Characterisation
6A-WS2	0.6	2.1	0.3	0.0018	0.0063	CS2
6A-WS3	0.1	0.1	0.3	0.0003	0.0003	CS1
6A-WS4	0.1	0.1	0.3	0.0003	0.0003	CS1
6A-WS5	0.1	0.9	0.3	0.0003	0.0027	CS1
6B-WS1	0.4	5.3	0.3	0.0012	0.0159	CS2
6B-WS4	0.1	0.1	0.3	0.0003	0.0003	CS1
BP-WS01	0.1	0.2	0.3	0.0003	0.0006	CS1
BP-WS02	0.1	0.1	0.3	0.0003	0.0003	CS1
BP-WS03	0.3	3.5	0.3	0.0009	0.0105	CS2
BP-WS07	0.1	0.2	0.3	0.0003	0.0003	CS1
BP-WS08	0.2	0.3	0.4	0.0008	0.0012	CS1

*0.1% concentration value has been used on any value less than 0.1%, based on the gas analyser margin of error.
**0.3 l/hr flow has been used on any value less than 0.3 l/hr, based on the gas analyser margin of error.

In accordance with BS 8485+A1-2019 and based on the gas monitoring completed to date, eight of eleven monitoring positions would fall within Characteristic Situation 1 (CS1) and the other three within Characteristic Situation 2 (CS2) due to the elevated peak methane concentrations observed; 5.3% (6B-WS1), 3.5% (BP-WS03) and 2.1% (6A-WS2).

If a worst case scenario GSV for methane is considered for the site, 0.0212 is calculated, equating to CS1 gas protection requirements. As a result of elevated methane in three wells, CS2 gas protection is required.

5.2 Proposed Gas Protection

In accordance with BS8485+A1:2019, a classification of CS2 would require a score of 1.5 based on the units being preliminarily classified as Type D structures, with offices (Type C) requiring a score of 2.5.

For all areas (Type C and D) we propose the following:

Item	Feature	Score
1	Cast in situ ground-bearing floor slab (with only nominal mesh reinforcement)	0.5
2	Independently inspected and validated gas resistant membrane.	2.0
	Total Score	**2.5**

The above proposed design meets the required scores for both Type C and Type D structures for CS2 gas protection. Based on the available information, the protection suggested in the above table is considered suitably protective of the proposed commercial building.

5.3 Radon

Information presented on the Public Health England 'UK Maps of Radon' website[1] indicates that the Site lies within an area likely to be affected by radon. The majority of the Site has a maximum radon potential of 1-3% and the area surrounding the northern boundary of the Site has a maximum radon potential of 10-30%.

A Radon Risk Address Search was undertaken and issued by the British Geological Survey, dated October 2023 (Report ID: BGS_335266/49187, presented in **Appendix E**), which shows that the majority of the Site lies within an area where 0-1% of homes estimated to be at or above the action level. However the northern extreme of the site lies within an area with 1-3% of homes estimated to be at or above the action level. As such, the site is in a radon effected area but no radon protection measures are likely to be required in the construction of the new development.

It is noted that CS2 gas protection measures have been recommended which will include the installation of an independently verified gas membrane.

[1] UKradon - UK maps of radon

6.0 Permeability Assessment

6.1 Introduction

The Glan Llyn Soils Validation Strategy for Protection of Controlled Waters (**Ref. 10**) assumes a hydraulic conductivity of 1 x 10-6 m/s or less for the engineered fill and also presents a rationale for the assessment of permeability.

It is proposed that the hydraulic conductivity of the fill is validated by taking at least three hydraulic conductivity measurements per phase, with a guide density of one test per 6.25 ha.

An assessment on the risk to controlled waters will be validated in a separate Controlled Waters Validation Report, but the following sections provide supporting infiltration testing using falling head tests, rising head tests and formation falling head tests.

6.2 Formation Falling Head Tests

Formation falling head tests were undertaken in six locations across the Site (6a6b7-1 to 6a6b7-5) between June 2025 and July 2025.

A 270mm diameter and 500mm high metal pipe was keyed in the ground approximately 25mm, A second 100mm pipe was keyed into the Made Ground within the larger pipe. The outside circumference of both pipes was sealed with natural clay and the pipes covered with a plastic sheet.

The purpose of the second pipe is to reduce surface wetting and horizontal movement of water, the plastic sheet was placed to reduce evaporation and rainfall interfering with the test.

Both pipes were filled with approximately 200mm to 250mm of clean water and measurements were taken to the top of water from the top of the inner pipe to measure the permeability of the underlying soils. The test is non-standard but is intended to be consistently repeatable to provide site specific data as a line of evidence to support the assumption that reengineering the near surface Made Ground has reduced the permeability.

Formation falling head tests were conducted for a minimum of 435 minutes, at the end of the testing period it was found that infiltration rates (measured in increments) had substantially stabilised and the calculated rate is considered more representative of the ground conditions.

The location of the formation falling head tests are shown on RLL drawing 17480-RLL-25-XX-DR-O-1330 (**Appendix A**), and the raw data is available in **Appendix F**.

Table 6.1 - Infiltration Test Results Summary						
Test ID	**Date**	**Initial Water Level (mm)**	**Duration of Test (mins)**	**Final Water Level (mm)**	**Total Fall in Water Level (mm)**	**Permeability (m/s)**
6b-Infiltration 1	30/06/25	270	435	244	26	9.96E-07
6b-Infiltration 2	03/07/25	265	450	239	26	9.96E-07
6b-Infiltration 3	09/07/25	279	480	251	28	9.72E-07
6a-Infiltration 1	07/07/25	287	450	262	25	9.23E-07
6a-Infiltration 2	08/07/25	270	526	239	31	9.82E-07
6a-Infiltration 3	11/07/25	277	510	247	30	9.80E-07

6.3 Falling Head Tests

Falling head tests were undertaken on three occasions within boreholes 6B-WS1, 6A-WS3 and 6A-WS4 in July 2025. Boreholes were drilled to depths of 1.0mBGL to 2.3mBGL and filled to surface level with clean water and intermittently measured as water returned to equilibrium levels. Tests were conducted for a minimum of 1190 minutes.

The location of the falling head tests are shown on RLL drawing 18669-RLL-25-XX-DR-O-1327-P01 (**Appendix A**).

Table 6.2 – Falling Head Test Results Summary			
Test ID	**Duration of Test (mins)**	**Total Fall in Water Level (mm)**	**Permeability (m/s)**
6B-WS1	1190	60	8.40E-07
6A-WS3	1560	93	9.94E-07
6A-WS4	1460	87	9.93E-07

The falling head tests indicated the permeability of the underlying soils to be very low, with a range of 8.40E-07m/s to 9.97E-07Em/s.

Based on the formation falling head test results the ground is considered to have poor drainage characteristics consistent with the modelling discussed within the Soils Validation Strategy for Protection of Controlled Waters (**Ref. 10**).

6.4 Rising Head Tests

Due to the lack of water present within the monitoring positions, the wells were unsuitable for the rising head tests and therefore could not be undertaken.

7.0 Conclusions

During previous intrusive ground investigations on Phase 6a, 6b & 7, the Made Ground on Site was found to contain numerous buried obstructions as well as isolated visual and olfactory signs of contamination. As such, remediation and earthworks were required to provide a suitable site for development. No exceedances of the generic assessment criteria for commercial end-use were recorded.

The remediation works were undertaken in two phases, the first phase was undertaken by ACS Construction Group between June 2021 and January 2022 and comprised the turnover of Made Ground to a minimum of 5.3mAOD. The purpose of the reclamation works was to uncover and, where possible, remove existing obstructions that may pose a potential constraint to the proposed development before reengineering material to the agreed formation level. Made Ground was trimmed to a level of ≤5.30mAOD, at this level visible obstructions and hard ground was chased out and removed; piles were retained and cropped to the base of excavation ≤5.30mAOD. The turnover also allowed for the removal of unsuitable material with evidence of visual and olfactory contamination.

Material sourced from the Site and the wider development was then engineered and compacted to approximately 7.25mAOD in the southern half of the Site. The northern half of the Site was left at a lower level of approximately 6.70mAOD to accommodate arisings from the first build phase.

The second phase of the remedial earthworks was undertaken by McCarthy Contractors (Bridgend) Ltd between March 2025 and June 2025 and comprised the uplift of the northern section of the Site to finished platform levels of 7.25mAOD, >600mm below the proposed final ground level to facilitate the provision of clean cover requirements.

Throughout the removal and re-engineering of the Made Ground, the Site was assessed by a RLL engineer for visual and olfactory evidence of contamination. Validation of the remedial earthworks relevant to Phase 6a, 6b & 7 comprised validation soil sampling, permeability testing and gas monitoring. The fill material used to re-engineer Phase 6a, 6b & 7 was predominantly granular, comprising sandy gravel with variable quantities of clay, silt and cobbles.

The engineered Made Ground within the phase is considered to have poor drainage characteristics (1 x 10-6 m/s or less) based on the falling head and formation falling head test results, and is consistent with the modelling and in accordance with the hydraulic conductivity assumptions made within the CWDQRA report and the Soils Validation Strategy for Protection of Controlled Waters.

146 soil samples were collected from the Tidal Flat Deposits during the initial trial pitting exercise and sent for contamination testing. No exceedances of S4UL generic assessment criteria for commercial end-use were recorded.

Exceedances of lead, aliphatic VPH >C8-C10, aromatic EPH >C16-C21, benzo[a]anthracene, benzo[b]fluoranthene, benzo(a)pyrene and dibenz(a,h)anthracene were encountered in a limited number of samples taken from

the fill material and the surface validation samples when compared to the S4UL generic assessment criteria for commercial end-use screening values.

Asbestos was identified within 52 of the 360 fill material soil samples tested at concentrations of between <0.001% to 0.0672%. One sample exceeded the IOM risk assessment screening criteria (40A-K11), this one sample makes up only one of 408 samples tested for asbestos. This source was used at significant depth beneath the formation platform, below the clean cover system and it will be beneath a commercial development beneath buildings and hardstanding. With the exception of this sample all concentrations are less than 0.03% (300PPM), the material is considered suitable for reuse in commercial areas beneath suitable clean cover, as per the IOM risk assessment report.

Asbestos was identified in 7 samples from the 48 analysed in surface validation samples, all below the IOM criteria.

It is considered that a suitable clean cover system of 600mm placed above the Made Ground will be sufficient in breaking the pathway between source and end users of the Site.

In accordance with BS 8485+A1-2019, based on the completed gas monitoring, The Site would fall under Characteristic Situation 2 (CS2) classification.

A Radon Risk Address Search was undertaken and issued by the British Geological Survey, dated October 2023 which shows that the majority of the Site lies within an area where 0-1% of homes estimated to be at or above the action level. However the northern extremity of the site lies within an area with 1-3% of homes estimated to be at or above the action level. As such, the site is in a radon effected area but no radon protection measures are likely to be required in the construction of the new development.

An assessment on the risk to controlled waters will be validated in a separate Controlled Waters Validation Report in accordance with the Hannah Fraser consulting Soils Verification Methodology.

The assessment of contaminated material, excavation to ≤5.3mAOD and the re-engineering of the Site has removed potential sources of contamination and has reduced the permeability of the Made Ground. Made Ground assessed to be suitable for reuse beneath the clean cover (when compared with criteria outlined in the RLL Remediation Strategy) was re-engineered and compacted in accordance with the RLL Earthworks Specifications. The Site has been re-engineered to be >600mm below final formation levels to facilitate the provision of clean cover across the Site. The pathway between the residual exceedances in the Made Ground and the site end-users will be broken with the provision of the imported clean cover, in accordance with the RLL Remediation Strategy.

Based on the site monitoring and validation information RLL consider that the remediation works at the site have been undertaken in accordance with the requirements of the Remediation Strategy.

Appendix A: Drawings

GENERAL NOTES

NO DIMENSIONS TO BE SCALED OFF THIS DRAWING.

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S AND ENGINEER'S DRAWINGS.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.

ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.

KEY:

Approximate Site Boundary

Rev	Date	Amendments	By	Chk

Client

St. Modwen Developments

Project

P17-480 Llanwern Business Park

Drawing Title

Phase 6a, 6b and 7

Site Location Plan

S10

	Drawn	Checked	Date
1:1250 @ A1	ET	CW	04.09.23

Drawing No. — Rev.

17480-RLL-23-XX-DR-O-1213 P01

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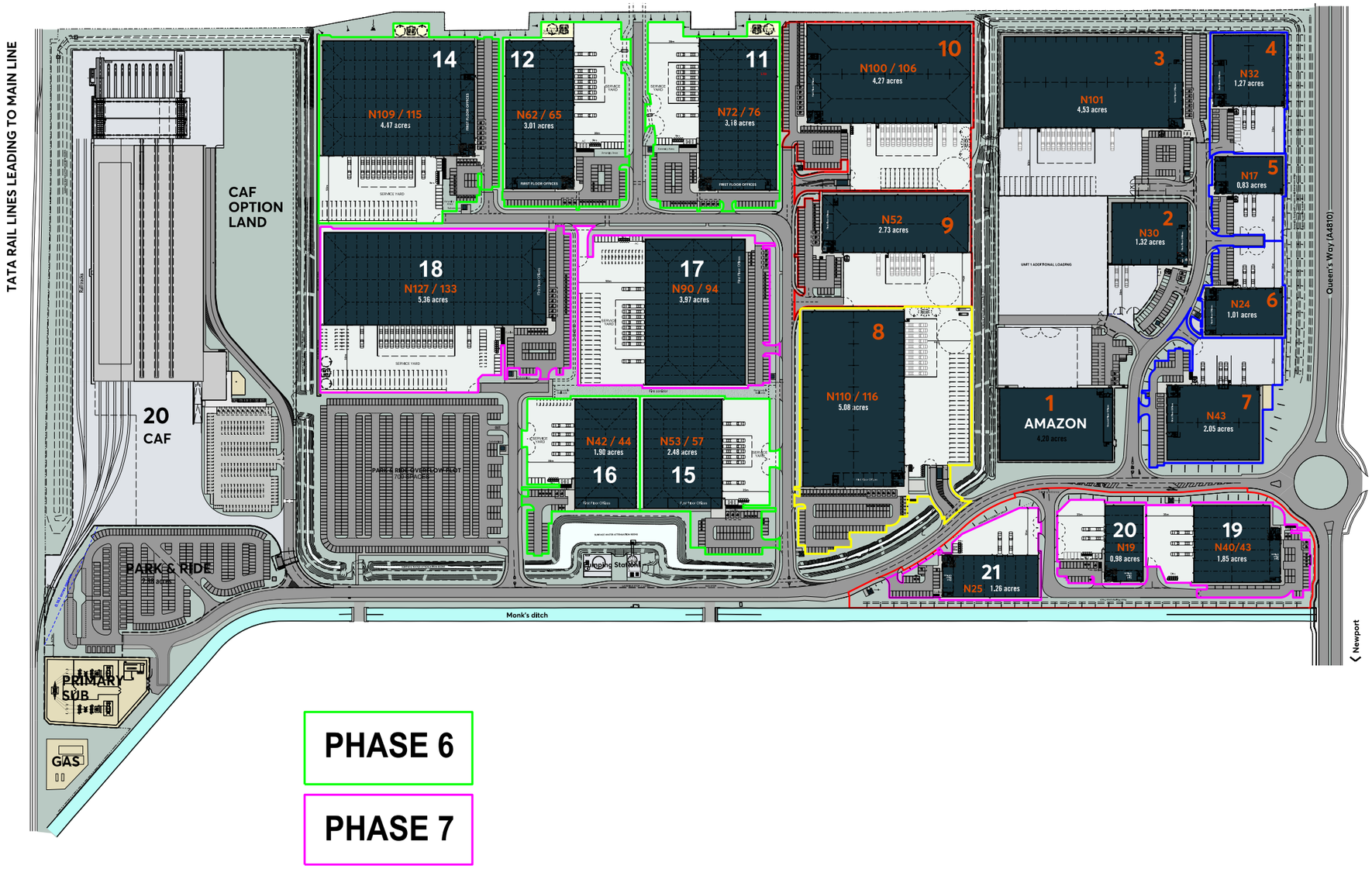

Scaling

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Drawing Revisions

REV.	DATE	BY	CHK	DESCRIPTION
-	-	-	-	-

Roberts Limbrick
03333 405500
mail@robertslimbrick.com
robertslimbrick.com
Registered Office: England No. 06958229

Project
INDURENT PARK
NEWPORT
-

Client
INDURENT

Drawing Title
MASTERPLAN (WITH P&R)
-
-

Scale	RL Project No.
1/1250 @ A0	10317

Status	Purpose of Issue
-	INFORMATION

Project	Org	Yr	Level	Type	Role
011	RLA	25	XX	PL	A

Number	Revision
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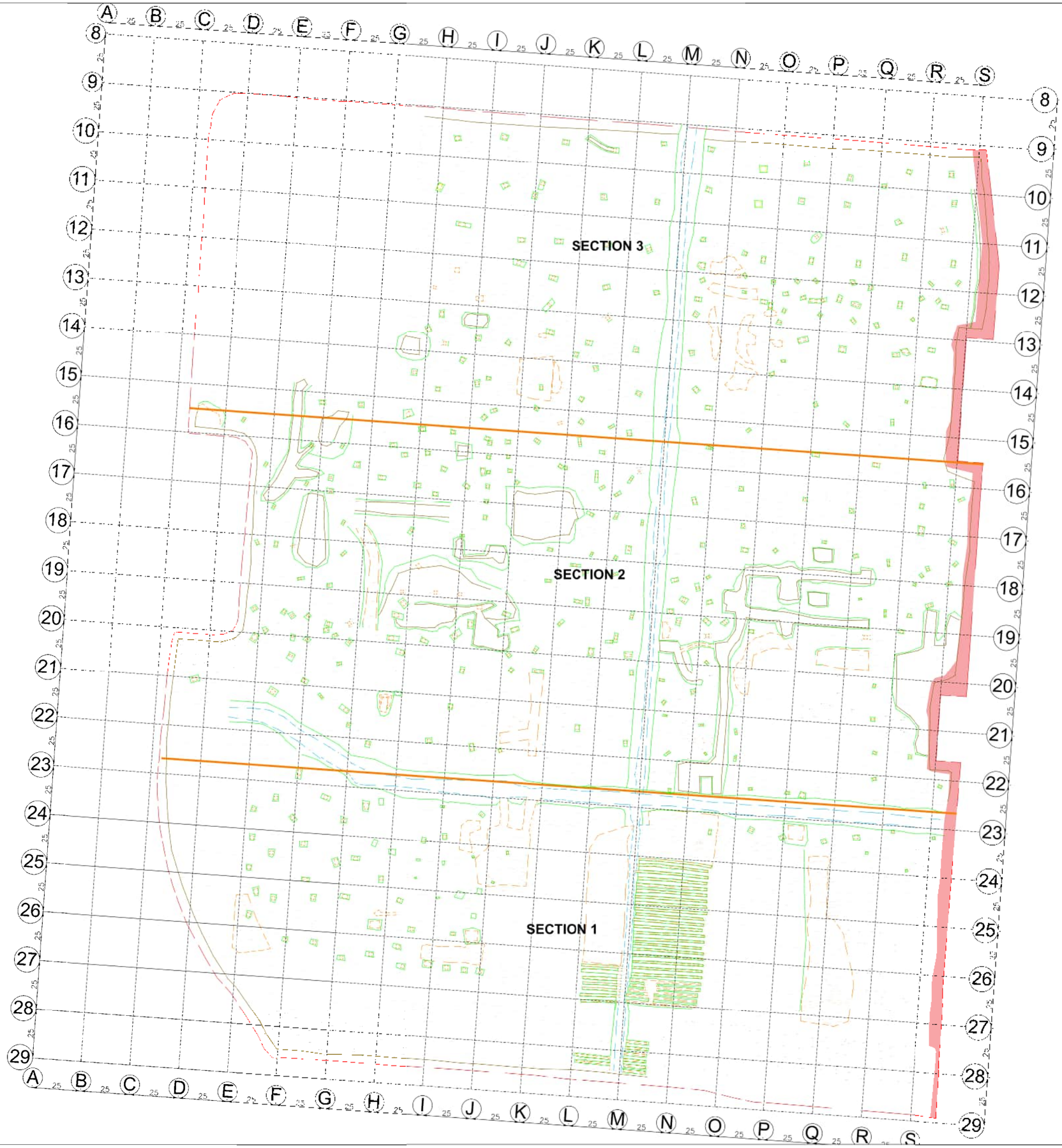


NOTES

REDLINE BOUNDARY

GRID LINES

PROPOSED STABILISATION AGGREGATE BOUNDARY

WORK TO EXISTING TOE OF CONCRETE STRUCTURE REMOVED

PROPOSED SECTIONAL DIVIDE LINE

BASE OF EXCAVATION LEVEL

1. THIS SURVEY IS ACCURATE AS OF 20/09/2021
2. THE ACCURACY AND AMOUNT OF DETAIL SHOWN IS ONLY EQUIVALENT WITH THE GEOGRAPHICAL SCALE OF MAPPING. CARE SHOULD BE TAKEN WHEN USING LARGER SCALES
3. DO NOT SCALE FROM THIS DRAWING
4. ALL DIMENSIONS SHOWN ON THIS DRAWING ARE IN METRES UNLESS OTHERWISE STATED
5. ALL LEVELS SHOWN ON THIS DRAWING ARE IN METERS.
6. ALL DIMENSIONS, LEVELS AND SURVEY GRID CO-ORDINATES ARE TO BE CHECKED ON SITE AND ACS CONSTRUCTION GROUP NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES PRIOR TO THE COMMENCEMENT OR CONTINUATION OF WORKS
7. SMART NET GPS COORDINATED CONTROL STATIONS WERE USED TO RELATE THE SURVEY TO ORDNANCE SURVEY GRID (OSTN15/OSGM15) THEN LOCALISED TO GREENHATCH CONTROL WITH LSF1 - SURVEY INFORMATION OBTAINED VIA AERIAL PHOTOGRAMMETRY

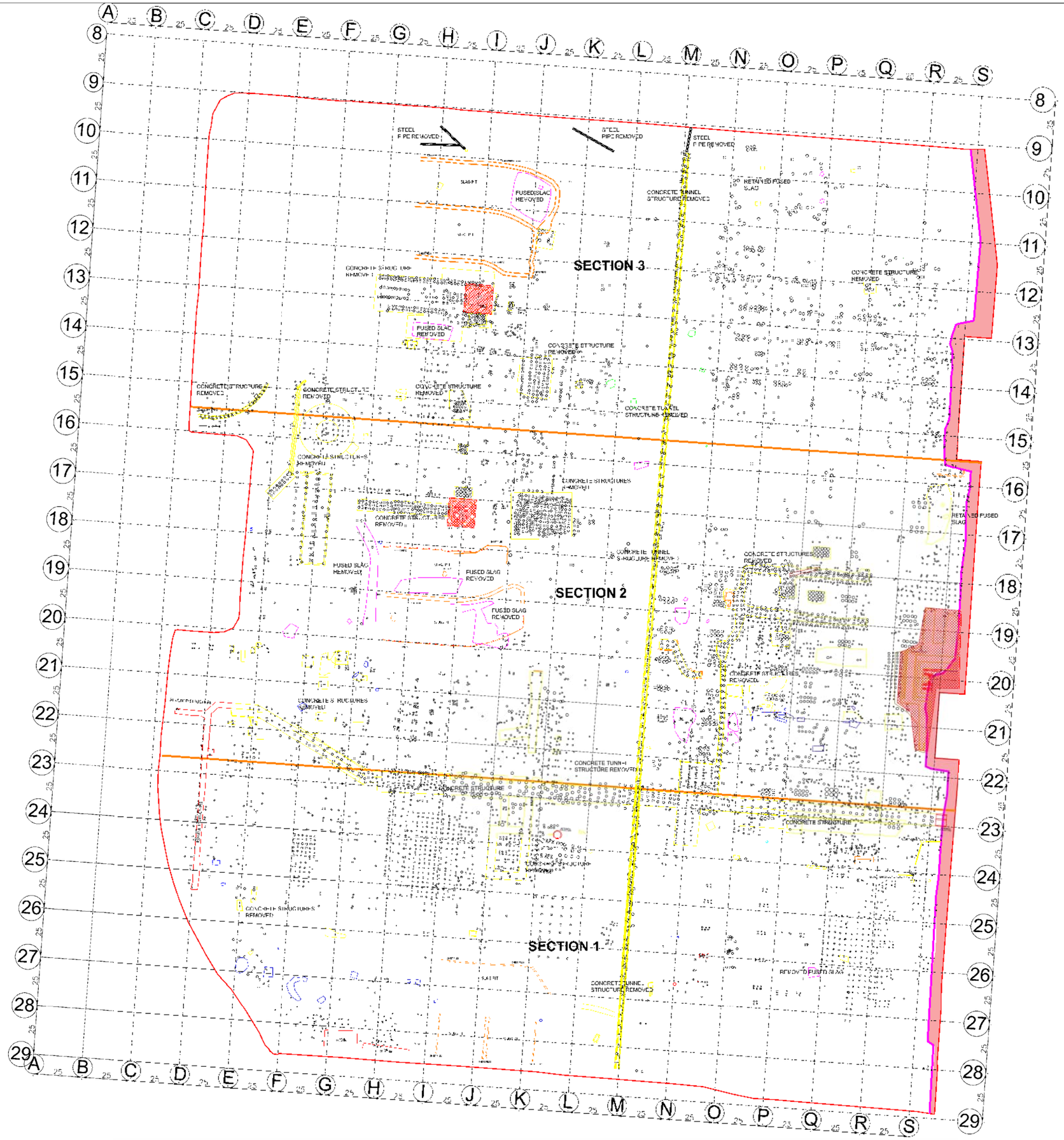
acs CONSTRUCTION GROUP

Job Title:
LLANWERN
COMMERCIAL BUSINESS PARK

Title:
SECTION 1,2 & 3
BASE OF EXCAVATION SURVEY

Drawing No.	Rev.:
ACS-SMPN-S3-BOE	1
Date: 18/05/2022	Scale: 1:1000 @ A1
Drawn by: SP	Checked by: AJP

INFORMATION



NOTES

- PROPOSED STAND-OFF ACCEPTABLE BOUNDARY
- WORKS EXISTING TOE OF CONCRETE STRUCTURE
- PROPOSED SECTIONAL ON/OFF LINE
- REMOVED CONCRETE STRUCTURE
- PROPOSED CONSTRUCTION
- STRUCTURES
- MANHOLE / CHAMBER
- REMOVED FUSED SLAG
- RETAINED FEATURE BASED ON AGREEMENT BETWEEN ACS AND LANDMARK ON 14/12/2021
- RETAINED PILE IRON
- PROPOSED SHEET PILES

1. THE SURVEY IS ACCURATE AS OF 21/12/2021
2. THE ACCURACY AND AMOUNT OF DETAIL SHOWN IS ONLY EQUIVALENT WITH THE GEOGRAPHICAL SCALE OF THE PRINTING. CARE SHOULD BE TAKEN WHEN USING LARGER SCALES
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6. ALL DIMENSIONS, LEVELS AND SURVEY GRID CO-ORDINATES ARE TO BE CHECKED ON SITE AND ACS CONSTRUCTION GROUP NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES PRIOR TO THE COMMENCEMENT OF OR CONTINUATION OF WORKS
7. SMARTNET GPS COORDINATED CONTROL STATIONS WERE USED TO RELATE THE SURVEY TO ORDNANCE SURVEY GRID (OSTN15/OSGM15) THEN LOCALISED TO GREENWATCH CONTROL WITH LSP1 SURVEY INFORMATION OBTAINED VIA AERIAL PHOTOGRAMMETRY

REV B - 21/12/2021 - SP
REV A - 20/09/2021 - SP

acs CONSTRUCTION GROUP

Job Title:
LLANWERN
COMMERCIAL BUSINESS PARK

Title:
OBSTRUCTION DRAWING
SECTION 1,2 & 3

Drawing No.	Rev.:
ACS-SMPN-S3-OBS	1
Date:	**Scale:**
18/05/2022	1:1000 @ A1
Drawn by:	**Checked by:**
SP	AJP

INFORMATION

KEY

Boundary Fence

Retaining Fence

Filter Drain

N

NOTES

1.

REV.	DESCRIPTION	BY	DATE
A	As Built	MP	03/06/2025

McCarthy Contractors
(Bridgend) Ltd

46A Village Farm Industrial Estate
Pyle - CF33 6BP
Tel - (01656) 745838 Fax - (01656) 740596

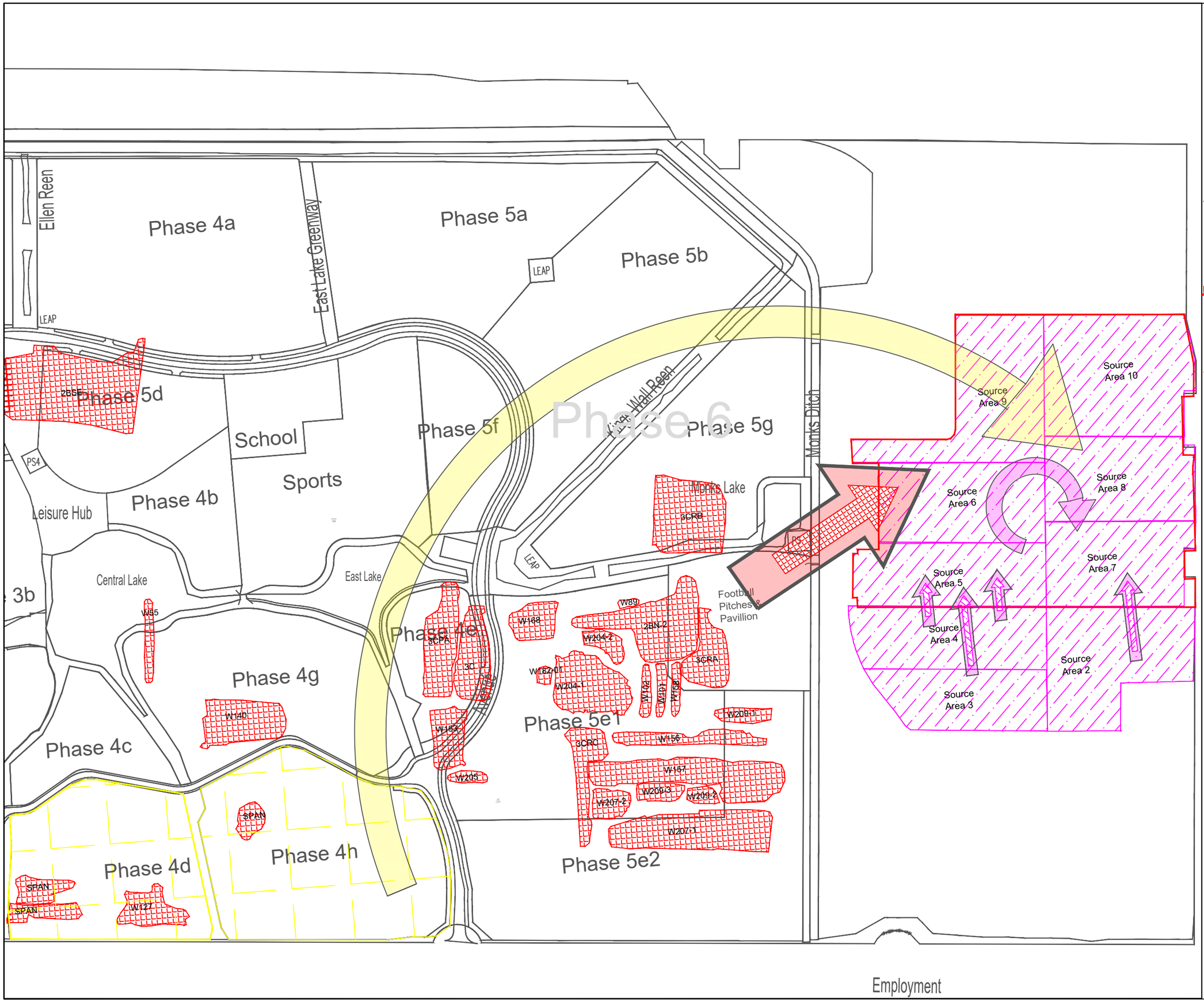
client: ST MODWENS

project: INDURENT PARK

drawing title: AS BUILTS
6A 6B UPLIFT

drawn	chkd	scale	date
MP	JR	N.T.S @A1	JUNE 2025

Report	Job No.	Drawing No.	Rev.
☐			A



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ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.

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KEY:

BUSINESS PARK SOURCE MATERIAL REUSED WITHIN PHASE 6a & 6b

RESIDENTIAL PHASES SOURCE MATERIAL (4d & 4h) FROM EXCAVATIONS

RESIDENTIAL PHASES SOURCE MATERIAL (4d & 4h) FROM STOCKPILES

PHASE 6a & 6b BOUNDARY

Rev	Date	Amendments	By	Chk

Client

Indurent Ltd.

Project

P17-480 Llanwern Business Park

Drawing Title

Phase 6a & 6b

Material Tracking Information

INFORMATION

	Drawn	Checked	Date
NTS	DM	CW	16/07/2025

Drawing No. Rev.

17480-RLL-25-XX-DR-O-1325 P01

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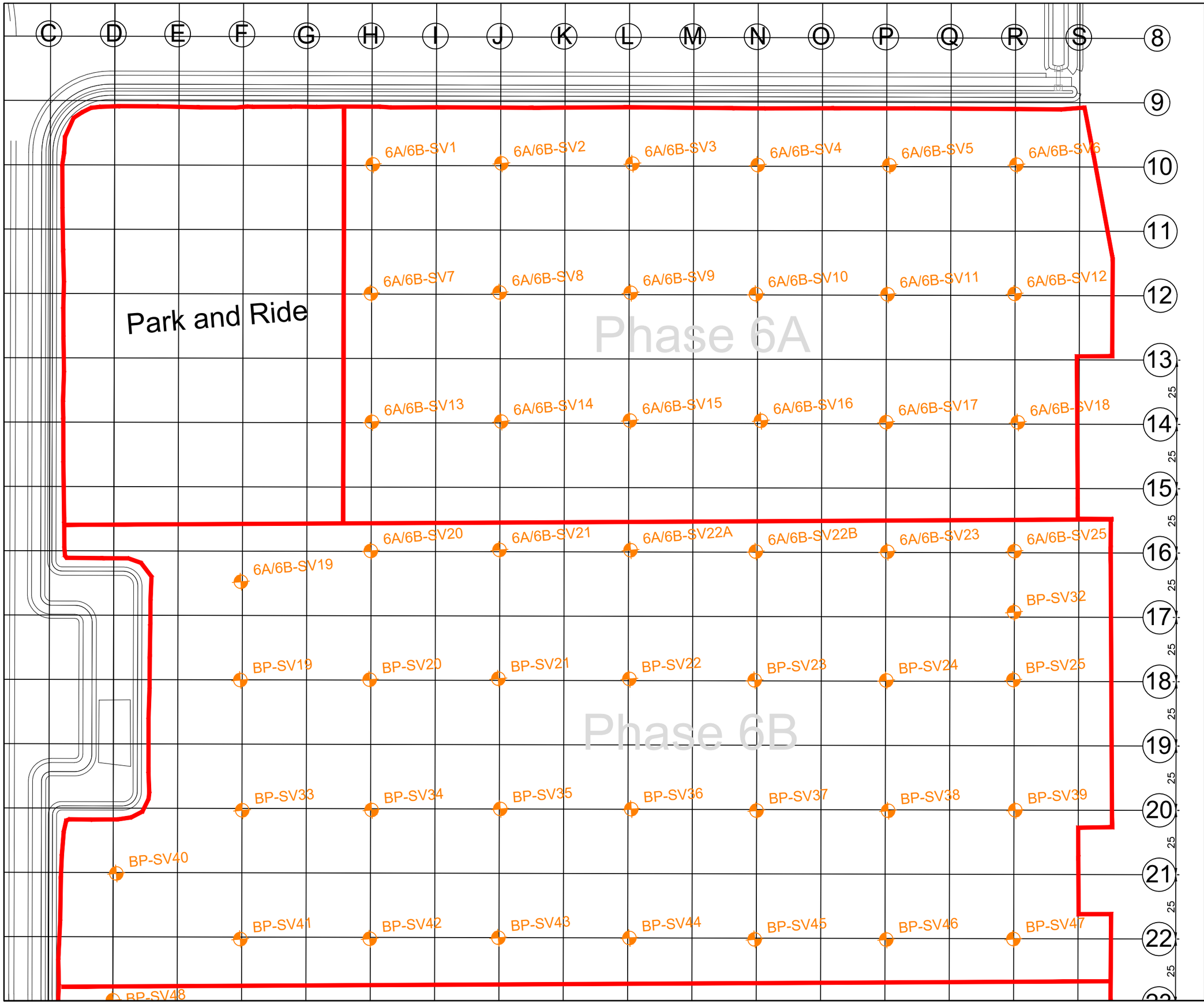

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KEY:

BP — SURFACE VALIDATION CHEMICAL SAMPLE LOCATION

APPROXIMATE PHASE BOUNDARY

Rev	Date	Amendments	By	Chk
P01	16/07/2025	First Issue	AMS	CW

Client

Indurent

Project

P17-480 Indurent, Business Park

Drawing Title

Phase 6A, 6B & 7 Surface Validation Plan

INFORMATION

	Drawn	Checked	Date
NTS	AMS	CW	16/07/25

Drawing No. — Rev.

17480-RLL-25-XX-DR-O-1324 P01

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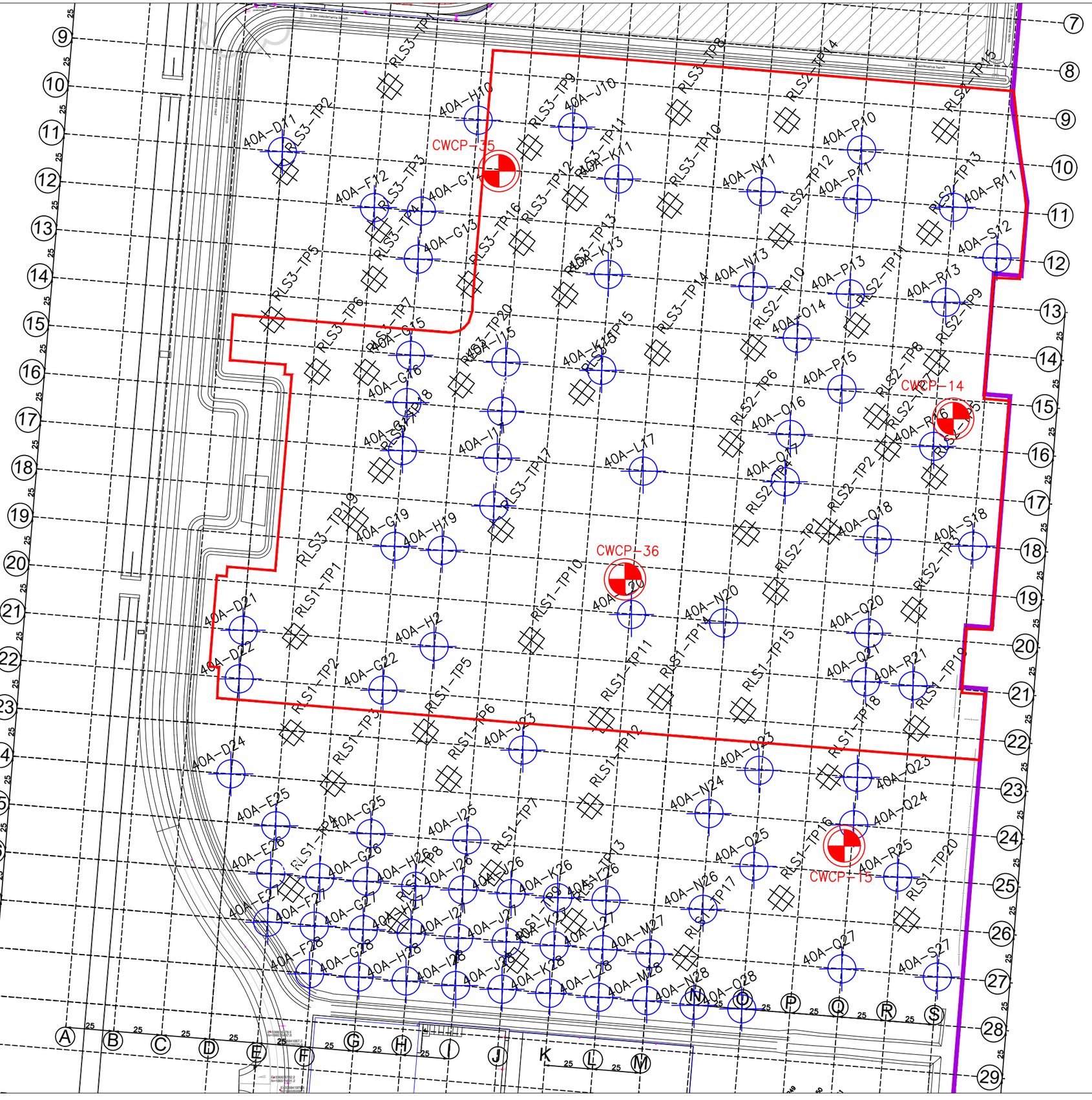

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Key

Section 3 Boundary

TP1 — RLL Trial Pits

40A–S12 — Atkins Trial Pits

CWCP–14 — CWRA BHs

Rev	Date	Amendments	By	Chk

Client

St Modwen Developments

Project

P17-480 Llanwern Business Park

Drawing Title

Phase 6a, 6b and 7

Trial Pit location plan

INFORMATION

	Drawn	Checked	Date
NTS	ET	CW	04.09.23

Drawing No. Rev.

17480-RLL-23-XX-DR-O-1219-P01

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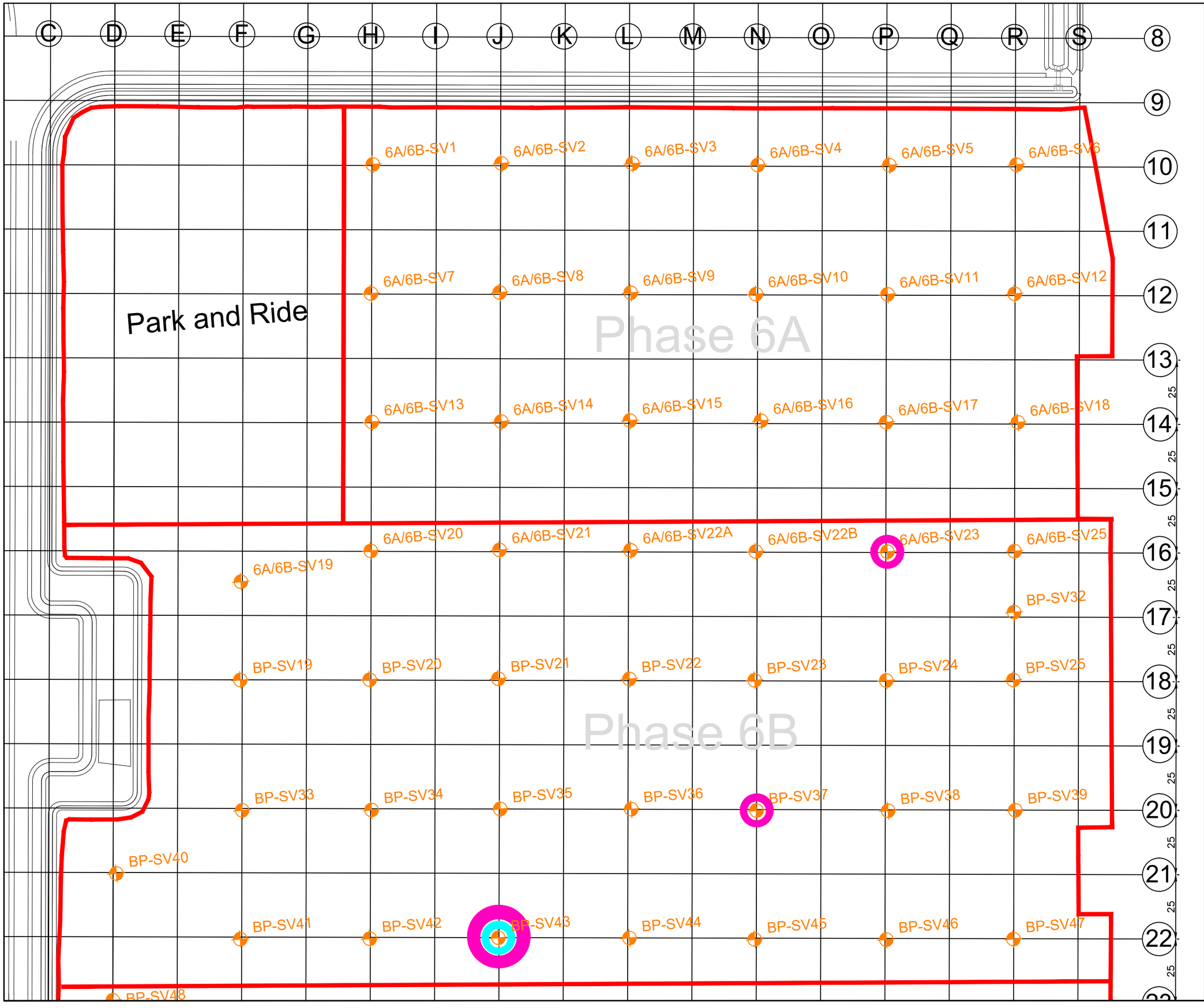

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KEY:

BP SURFACE VALIDATION CHEMICAL SAMPLE LOCATION

APPROXIMATE PHASE BOUNDARY

BENZO[A]PYRENE EXCEEDANCE LOCATION

DIBENZ(A,H)ANTHRACENE EXCEEDANCE LOCATION

Rev	Date	Amendments	By	Chk
P01	16/07/2025	First Issue	AMS	CW

Client

Indurent

Project

P17-480 Indurent, Business Park

Drawing Title

Phase 6A, 6B & 7 Surface

Validation Exceedance Location Plan

INFORMATION

	Drawn	Checked	Date
NTS	AMS	CW	16/07/25

Drawing No. Rev.

17480-RLL-25-XX-DR-O-1326 P01

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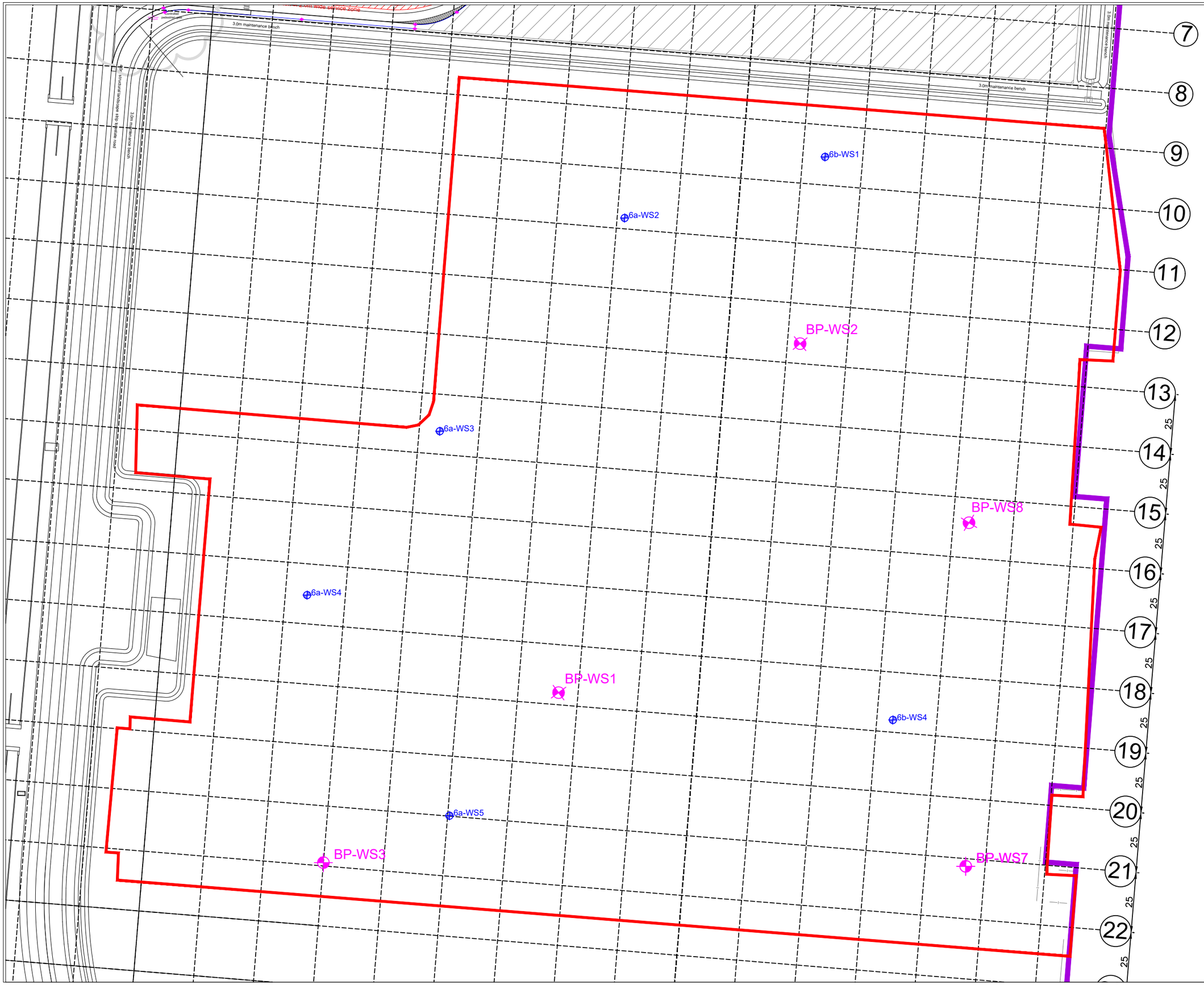

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Key

Site Boundary

6a-WS1 RLL 2025 WS locations

BP-WS1 RLL 2022 WS locations

Rev	Date	Amendments	By	Chk
P03	16/07/2025	Lost WS positions removed	AMS	CW
P02	N/A	N/A		
P01	12/05/2025	First Issue	DM	CW

Client

Indurent

Project

P17-480 Llanwern Business Park

Drawing Title

Phase 6a, 6b & 7 Window Sample (WS) Borehole Location Plan

INFORMATION

	Drawn	Checked	Date
NTS	RH	DM	12.05.25

Drawing No. — Rev.

17480-RLL-25-XX-DR-O-1298 P03

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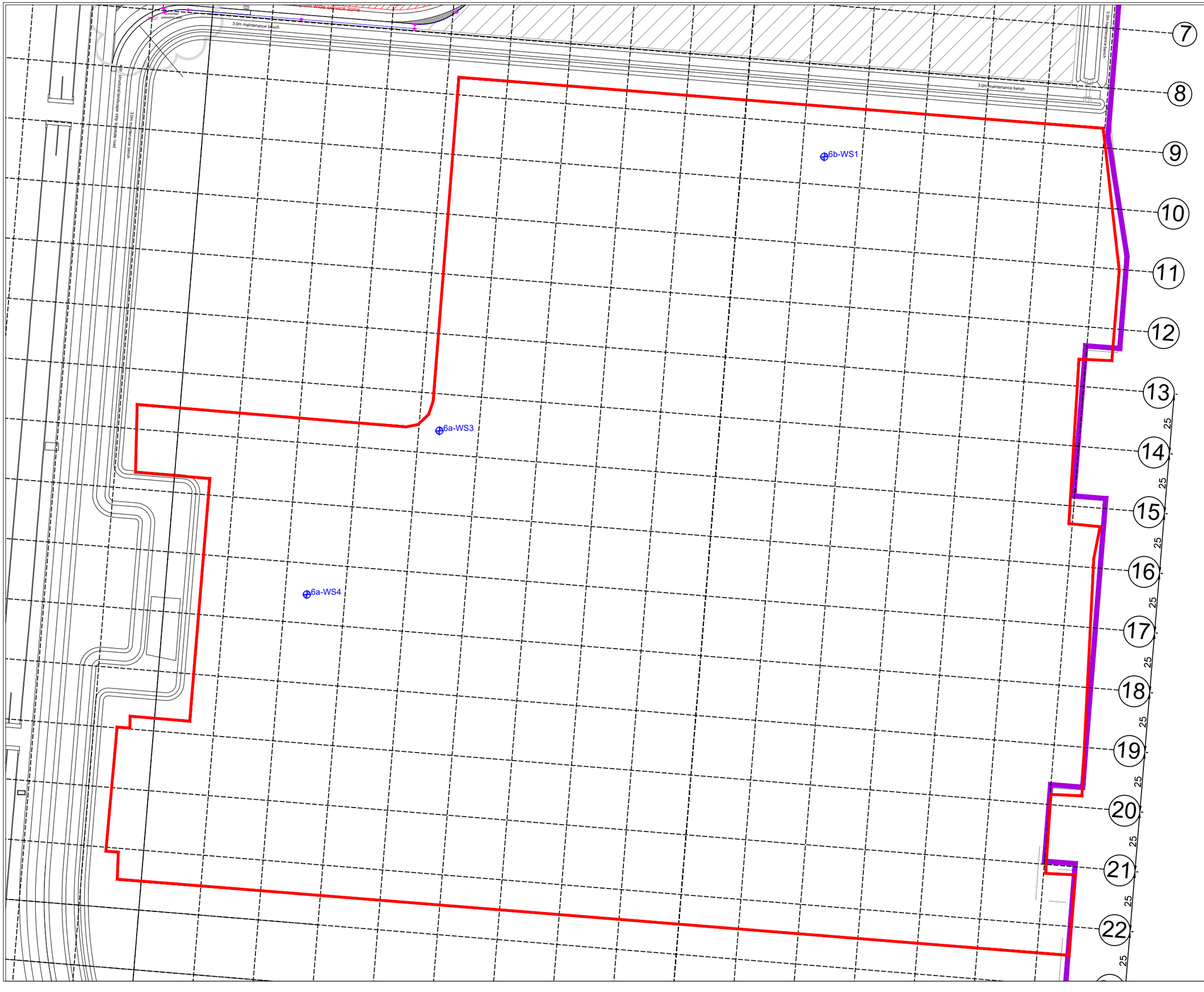

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Key

Site Boundary

6a-WS1 RLL 2025 WS locations

Rev	Date	Amendments	By	Chk
P01	17/07/2025	First Issue	AMS	CW

Client

Indurent

Project

P17-480 Llanwern Business Park

Drawing Title

Phase 6a, 6b & 7 Falling Head

Location Plan

INFORMATION

	Drawn	Checked	Date
NTS	RH	CW	17/07/25

Drawing No. Rev.

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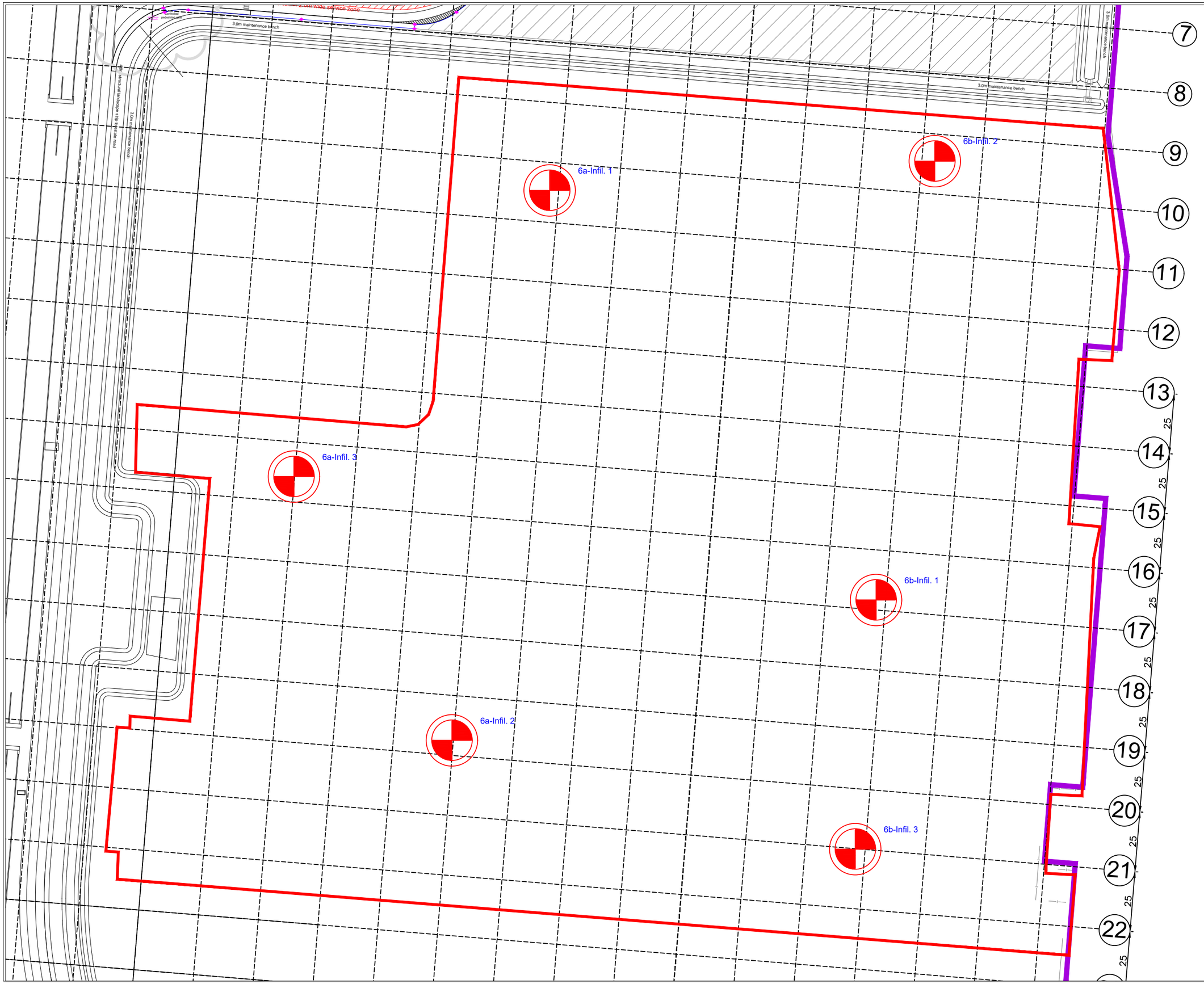

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Key

Site Boundary

6b-Infil. 1 Surface Infiltration Test Location

Rev	Date	Amendments	By	Chk
P01	17/07/2025	First Issue	DM	CW

Client

Indurent

Project

P17-480 Llanwern Business Park

Drawing Title

Phase 6a, 6b & 7

Surface Infiltration Test Plan

INFORMATION

	Drawn	Checked	Date
NTS	DM	CW	17/07/25

Drawing No. 17480-RLL-25-XX-DR-O-1330

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Appendix B: Photographic Report

40 Acre Plot – Phase 6a, 6b & 7 – Photographic Report

Photograph 1 (17/02/22) – Concrete from structures below ground is processed to remove scrap metal including pig iron prior to screening and crushing.

Photograph 2 (17/02/21) – Large areas of Section 3 are encountered below 5.3mAOD. This is due to historical breakout and earthworks or a lack of historical structures in these areas.

Photograph 3 (18/02/22) – A fill area in the centre of Section 3. Some inclement weather is preventing additional layers being placed. Compaction visually appears to be compliant with the specification.

Photograph 4 (18/02/22) – Scrap metal is segregated.

Photograph 5 (23/02/22) – A fill area is compacted with a vibrating roller. Compaction is visually compliant with the specification.

Photograph 6 (23/02/22) – An area is reduced to at least 5.3mAOD. Confirmatory trial pits have been progressed in this area to confirm ground conditions and depth to natural Tidal Flat Deposits (TFD).

Photograph 7 (08/03/22) – Numerous piles are encountered in this area and Made Ground remains at the base of excavation. Confirmatory trial pits are progressed to confirm ground conditions and depth to natural deposits.

Photograph 8 (10/03/22) – Made Ground is encountered as relatively soft Made Ground in this area with patches of the natural Tidal Flat Deposits exposed during the excavation.

Photograph 9 (24/03/22) – A further area in the centre of Section 3 is cleared to at least 5.3mAOD.

Photograph 10 (05/04/21) – Progress of the fill area in Section 3. Compaction appears to be visually compliant with the specification.

Photograph 11 (12/04/22) – A large square sheet pile structure has been retained. Numerous piles have been encountered in the areas surrounding this structure.

Photograph 12 (12/04/22) – The location of the former Drain 5 is backfilled in engineered layers.

Photograph 13 (26/04/22) –The northern section of historical Drain 5 is exposed prior to breakout.

Photograph 14 (03/05/22) – Large areas of fill areas are nearing completed level. Compaction visually appears to meet the specification.

Photograph 15 (30/05/22) – Section 3 complete.

40 Acre Plot – Phase 6a, 6b & 7 – Photographic Report

Photograph 16 (13/09/21) – Hard fused areas of slag are frequently encountered in Section 2. Breakout commenced in the area of a historical slag pit. Sheet piles are encountered along the approximate boundary of this slag pit.

Photograph 17 (13/09/21) – Extensive breakout is required on numerous areas above 5.3mAOD. Evidence of substantial hard fused slag on one of the historical eastern haul roads.

Photograph 18 (17/09/21) – Oversize is removed from backfill and stockpiled.

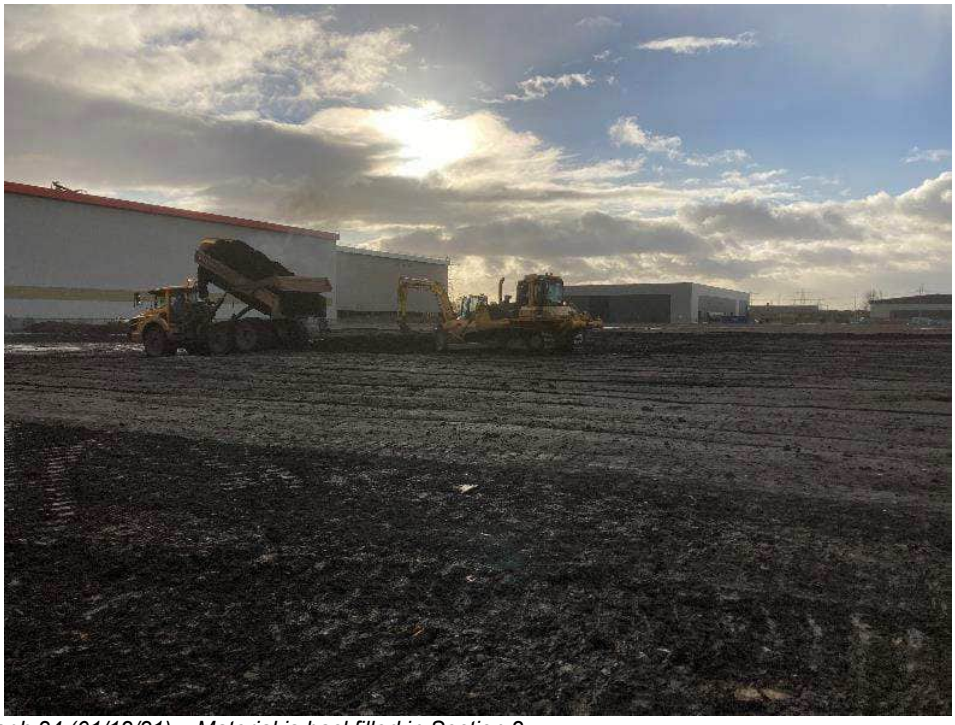
Photograph 19 (27/09/21) – Material is backfilled in Section adjacent to the excavation and broken out section of Drain 5.

Photograph 20 (14/10/21) – An extensive breakout operation nears completion. A tunnel structure related to the blast furnace has been broken with the underlying piles exposed

Photograph 21 (22/10/21) – Extensive breakout of concrete associated with the blast furnace in a historically low area i.e. beneath 5.3mAOD prior to works commencing. This area falls within a proposed unit footprint.

Photograph 22 (04/11/21) – Oversize is removed with an excavator and backfill is compacted with a vibrating drum roller.

Photograph 23 (24/11/21) – Material is backfilled in Section 2.



Photograph 24 (01/12/21) – Material is backfilled in Section 2.

Photograph 25 (06/12/21) – A large deep sheet pile structure has been retained. Trial pits could not be progressed safely to prove clay and confirm ground conditions within the centre of this structure.

Photograph 26 (02/02/22) – Section 2 complete.

Photograph 27 (31/03/25) – Uplift commences from stockpile on phase.

Photograph 28 (14/05/22) – A dozer blades out material in a thin layer trimming to formation level.

Photograph 29 (30/05/25) – Uplift complete.

Appendix C: S4UL Screening Summary Table

Project 773-555

Client: Rodgers Lead Environmental	Lab.Job No.																															
	Lab Sample ID:																															
	Client Sample Ref.:																															
	Sample Type:	5456, Commercial GAC (SOM 01)																															
	Top Depth (m):																															
	Bottom Depth (m):																															
	Date Sampled:																															
	Asbestos Lab:																															

Determinand	Accred.	SOP	Units	LOD	No. of Samples	Min	Max	Average - all	Upper 90th percentile
ACM Type	U	2192		N/A	126				
Asbestos Identification	U	2192		N/A	360				
Asbestos by Gravimetry	U	2192	%	0.001	189	0.0001	0.0872	0.0031	0.02
Total Asbestos	U	2192	%	0.001	3				
Moisture	N	2030	%	0.05	311				
Soil Colour	N	2040		N/A	794				
Other Material	N	2040		N/A	794				
Soil Texture	N	2040		N/A	794				
pH	M	2010	pH Units	1	723				
Cyanide (Total)	M	2300	mg/kg	1	933	0.50	449.00	4.07	7.40
Ammoniacal Nitrogen	M	2425	mg/kg	1	815	0.50	519.00	45.35	261.76
Iron (Total)	N	2450	mg/kg	1000	933	4370.00	23600000.00	93996.25	20000.00
Arsenic	M	2450	mg/kg	0.50	933	0.50	125.00	10.26	16.98
Cadmium	M	2450	mg/kg	0.02	933	0.02	39.20	0.83	2.46
Chromium	M	2450	mg/kg	0.8	933	0.50	1200.00	148.85	476.70
Manganese	M	2450	mg/kg	13	933	36.00	49600.00	1087.84	3107.00
Copper	M	2450	mg/kg	1.4	933	1.40	440.00	24.82	51.55
Mercury	M	2450	mg/kg	0.14	933	0.05	6.12	0.57	1.40
Nickel	M	2450	mg/kg	0.75	933	0.50	307.00	21.85	47.99
Lead	M	2450	mg/kg	0.7	933	0.70	7160.00	125.61	313.00
Selenium	M	2450	mg/kg	0.2	933	0.20	64.10	3.54	16.30
Vanadium	U	2450	mg/kg	0.2	933	1.80	2680.00	238.16	700.90
Zinc	M	2450	mg/kg	1.5	933	1.80	20100.00	156.60	398.00
Organic Matter	M	2625	%	0.5	815				
Aliphatic VPH >C5-C6	N	2680	mg/kg	0.2	933	0.05	0.05	0.05	0.05
Aliphatic VPH >C6-C7	N	2680	mg/kg	0.02	933	0.05	0.05	0.05	0.05
Aliphatic VPH >C7-C8	N	2680	mg/kg	0.02	933	0.05	0.05	0.05	0.05
Aliphatic VPH >C5-C8 (Sum)	N	2680	mg/kg	0.02	933	0.05	0.05	0.05	0.05
Aliphatic VPH >C8-C10	M	2680	mg/kg	0.02	933	0.01	2110.00	2.67	1.00
Total Aliphatic EPH >C5-C10	M	2680	mg/kg	2	933				
Aliphatic EPH >C10-C12	N	2680	mg/kg	0.02	933	0.01	651.00	2.61	5.48
Aliphatic EPH >C12-C16	N	2680	mg/kg	0.02	933	0.01	1310.00	5.29	12.00
Aliphatic EPH >C16-C21	N	2680	mg/kg	0.1	933	0.02	3530.00	59.89	112.75
Aliphatic EPH >C21-C35	N	2680	mg/kg	0.1	933	0.10	3260.00	72.77	232.50
Aliphatic EPH >C35-C40	N	2680	mg/kg	0.1	933	0.10	948.00	52.85	118.76
Total Aliphatic EPH >C12-C35	N	2680	mg/kg	4	933				
Total Aliphatic EPH >C10-C40	N	2680	mg/kg	4	933				
Total Aromatic VPH >C5-C7	N	2680	mg/kg	0.2	933	0.01	50.00	0.25	1.00
Aromatic VPH >C7-C8	N	2680	mg/kg	0.02	933	0.01	45.00	0.24	1.00
Aromatic VPH >C8-C10	N	2680	mg/kg	0.02	933	0.01	44.00	0.25	1.00
Total Aromatic VPH >C5-C10	N	2680	mg/kg	0.02		< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12	N	2680	mg/kg	0.02	933	0.01	1060.00	3.38	9.76
Aromatic EPH >C12-C16	N	2680	mg/kg	0.02	933	0.05	635.00	11.89	33.51
Aromatic EPH >C16-C21	N	2680	mg/kg	0.1	933	0.10	2220.00	57.97	177.00
Aromatic EPH >C21>C35	N	2680	mg/kg	0.1	933	0.10	5480.00	151.66	500.70
Aromatic EPH >C35-C40	N	2680	mg/kg	0.1	933	0.10	1080.00	42.72	160.70
Total Aromatic EPH >C12-C35	M	2680	mg/kg	0.1		110.00	110.00	110.00	110.00
Total Aromatic EPH >C10-C40	M	2680	mg/kg	0.1		150.00	150.00	150.00	150.00
Total VPH >C5-C10	N	2680	mg/kg	0.1		< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C40	N	2680	mg/kg	4		350.00	350.00	350.00	350.00
Total EPH >C10-C40	N	2680	mg/kg	4	933	260.00	260.00	410.00	430.00
Benzene	M	2925	mg/kg	0.001	933	0.001	8.57	0.15	0.19
Toluene	M	2760	mg/kg	0.02	933	0.001	1.40	0.10	0.14
Ethylbenzene	M	2760	mg/kg	0.04	933	0.001	5.67	0.07	0.08
m & p-Xylene	M	2760	mg/kg	0.04	933	0.001	16.40	0.17	0.20
o-Xylene	M	2760	mg/kg	0.1	933	0.001	2.04	0.05	0.05
Methyl Tert-Butyl Ether	M	2760	mg/kg	0.1	933	0.001	165.00	2.02	0.20
Naphthalene	M	2800	mg/kg	0.046	933	0.01	1050.00	6.92	19.34
Acenaphthene	M	2800	mg/kg	0.046	933	0.01	204.00	2.71	5.50
Acenaphthene	M	2800	mg/kg	0.04	933	0.01	95.70	0.33	0.86
Fluorene	M	2800	mg/kg	0.046	933	0.01	166.00	2.29	5.81
Phenanthrene	M	2800	mg/kg	0.075	933	0.01	931.00	9.67	38.99
Anthracene	M	2800	mg/kg	0.054	933	0.01	354.00	3.12	10.97
Fluoranthene	M	2800	mg/kg	0.085	933	0.02	1260.00	15.02	57.51
Pyrene	M	2800	mg/kg	0.075	933	0.02	953.00	10.83	40.00
Benzo[a]anthracene	M	2800	mg/kg	0.07	933	0.01	358.00	6.08	25.00
Chrysene	M	2800	mg/kg	0.07	933	0.01	559.00	5.55	23.90
Benzo[b]fluoranthene	M	2800	mg/kg	0.075	933	0.02	376.00	7.67	34.94
Benzo[k]fluoranthene	M	2800	mg/kg	0.07	933	0.01	159.00	2.45	12.14
Benzo[a]pyrene	M	2800	mg/kg	0.072	933	0.02	303.00	5.53	23.75
Indeno[1,2,3-cd]Pyrene	M	2800	mg/kg	0.09	933	0.02	194.00	4.04	16.09
Dibenz[a,h]Anthracene	M	2800	mg/kg	0.115	933	0.02	655.00	1.50	4.44
Benzo[g,h,i]perylene	M	2800	mg/kg	0.102	933	0.02	223.00	3.69	16.28
Total OF 16 PAHs	M	2800	mg/kg	1.96		59.00	61.00	130.00	150.00
Dibenzofuran	M	2800	mg/kg	0.05		< 0.050	< 0.050	< 0.050	< 0.050
Phenol	M	2920	mg/kg	0.01	933	0.01	13.80	0.04	0.15
Cresols	M	2920	mg/kg	0.01		< 0.020	< 0.020	< 0.020	< 0.020
Xylenols	M	2920	mg/kg	0.01		< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol	M	2920	mg/kg	0.02		< 0.020	< 0.020	< 0.020	< 0.020
Trimethylbenzenes	M	2920	mg/kg	0.02		< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.02		< 0.10	< 0.10	< 0.10	< 0.10

Surface Validations																																
25-17612	25-17612	25-17612	25-17612	25-17612	25-17612	25-17612	25-17612	25-17612	25-17612	25-17612	25-17612	25-17612	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778
19/7/631	19/7/632	19/7/633	19/7/634	19/7/635	19/7/636	19/7/637	19/7/638	19/7/639	19/7/640	19/7/641	19/7/642	19/7/643	19/7/520	19/7/521	19/7/522	19/7/523	19/7/524	19/7/525	19/7/526	19/7/527	19/7/528	19/7/529	19/7/530	19/7/531	19/7/532	17/7/432	17/7/433	17/7/434	17/7/435	17/7/436	17/7/437	17/7/438	17/7/439
6A/BS-5/1/1	6A/BS-5/1/2	6A/BS-5/1/3	6A/BS-5/1/4	6A/BS-5/1/5	6A/BS-5/2/A	6A/BS-5/2/B	6A/BS-5/2/C	6A/BS-5/2/D

Project P19-025

| Client: Rodgers Lead Environmental | Lab/Job No. | | |

Project P19-005

| Client: Rutgers Lawn Environmental | Lab Job No. | 1788670 | 1792713 | 1793728 | 1795040 | 1795058 | 1800610-113 | 1800610-115 | 1800634-1 | 1800638-1 | 1800639-1 | 1800639-3 | 1800639-4 | 1800640-1 | 1800640-2 | 1800640-3 | 1800640-4 | 1800640-5 | 1800640-6 | 1800640-7 | 1800640-8 | 1800640-9 | 1800640-10 | 1800640-11 | 1800640-12 | 1800640-13 | 1800640-14 | 1800640-15 | 1800640-16 | 1800640-17 | 1800640-18 | 1800640-19 | 1800640-20 |

Project P19-005

Determinant	Accred.	SOP	Units	LOD	No. of Samples	Min	Max	Average - all	Upper 95th-percentile
ACM Type	U	2102		N/A	126				
Asbestos Identification	U	2102		N/A	360				
Asbestos by Gravimetry	U	2102	%	0.001	199	0.0001	0.0872	0.0031	0.02
Total Asbestos	U	2102	%	0.001	5				
Moisture	N	2540	%	0.05	311				
Soil Colour	N	2040		N/A	794				
Other Material	N	2040		N/A	794				
Soil Texture	N	2040		N/A	794				
pH	M	2010	pH Units	1	723				
Cyanide (Total)	M	2300	mg/kg	1	933	0.50	440.00	4.07	7.40
Ammoniacal Nitrogen	M	2400	mg/kg	0.2	915	0.50	519.00	45.35	261.76
Iron (Total)	N	2450	mg/kg	10000	933	4370.00	236000.00	33398.25	230000.00
Arsenic	M	2450	mg/kg	0.5	933	0.50	125.00	10.36	38.98
Cadmium	M	2450	mg/kg	0.02	933	0.02	59.20	0.83	2.46
Chromium	M	2450	mg/kg	0.5	933	0.50	1000.00	148.85	479.76
Manganese	M	2450	mg/kg	15	933	36.00	49800.00	1087.64	31670.00
Nickel	M	2450	mg/kg	0.5	933	1.60	440.00	24.82	51.55
Mercury	M	2450	mg/kg	0.14	933	0.05	6.12	0.57	1.45
Lead	M	2450	mg/kg	0.7	933	0.70	7100.00	125.61	313.30
Selenium	M	2450	mg/kg	0.2	933	0.20	1000.00	1.97	3.25
Vanadium	M	2450	mg/kg	0.2	933	1.80	2680.00	238.18	700.90
Zinc	M	2450	mg/kg	0.5	933	1.60	20000.00	138.60	697.00
Organic Matter	N	2625	%	0.35	815			1.61	5.19
Aliphatic VPH >C5-C6	N	2980	mg/kg	0.05	933	0.05	46.50	0.23	1.00
Aliphatic VPH >C6-C7	N	2980	mg/kg	0.05	0	0.05	0.05	0.05	
Aliphatic VPH >C7-C8	N	2980	mg/kg	0.02	0	0.02	0.02	0.02	
Aliphatic VPH >C8-C10 (Sum)	M	2980	mg/kg	0.02	933	0.01	1000.00	0.35	1.00
Aliphatic VPH >C8-C10	M	2980	mg/kg	0.02	933	0.01	2110.00	2.67	1.00
Total Aliphatic VPH >C5-C10	M	2980	mg/kg	0.08					
Aliphatic EPH >C10-C12	N	2980	mg/kg	0.02	933	0.01	651.00	2.61	5.48
Aliphatic EPH >C12-C16	N	2980	mg/kg	0.02	933	0.01	1000.00	10.29	32.20
Aliphatic EPH >C16-C21	N	2980	mg/kg	0.02	933	0.01	3530.00	59.89	112.75
Aliphatic EPH >C21-C35	N	2980	mg/kg	0.02	933	0.10	3360.00	72.77	212.30
Aliphatic EPH >C35-C40	N	2980	mg/kg	0.02	933	0.01	1000.00	14.90	45.01
Total Aliphatic EPH >C10-C35	M	2980	mg/kg	0.1					
Total Aliphatic EPH >C10-C40	M	2980	mg/kg	0.1					
Aromatic VPH >C5-C7	N	2980	mg/kg	0.02	933	0.01	50.00	0.25	1.00
Aromatic VPH >C7-C8	N	2980	mg/kg	0.02	933	0.01	45.00	0.24	1.00
Aromatic VPH >C8-C10	N	2980	mg/kg	0.02	933	0.01	1000.00	0.44	1.00
Total Aromatic VPH >C5-C10	N	2980	mg/kg	0.02					
Aromatic EPH >C10-C12	N	2980	mg/kg	0.02	933	0.01	1000.00	3.38	9.76
Aromatic EPH >C12-C16	N	2980	mg/kg	0.1	933	0.05	635.00	11.26	33.51
Aromatic EPH >C16-C21	N	2980	mg/kg	0.1	933	0.05	4330.00	119.56	276.50
Aromatic EPH >C21-C35	N	2980	mg/kg	0.1	933	0.10	5480.00	151.66	500.70
Aromatic EPH >C35-C40	N	2980	mg/kg	0.1	933	0.01	1080.00	42.72	160.74
Total Aromatic EPH >C10-C35	M	2980	mg/kg	0.1					
Total Aromatic EPH >C10-C40	M	2980	mg/kg	0.1					
Total VPH >C5-C10	M	2980	mg/kg	0.1					
Total EPH >C10-C40	M	2980	mg/kg	0.1					
Total EPH >C10-C40	M	2980	mg/kg	0.1					
Benzene	M	2925	mg/kg	0.001	837	0.01	0.14	0.01	0.03
Toluene	M	2760	mg/kg	0.01	933	0.01	1.40	0.10	0.14
Ethylbenzene	M	2760	mg/kg	0.01	933	0.01	1.40	0.10	0.14
m & p-Xylene	M	2760	mg/kg	0.01	933	0.01	5.60	0.40	0.56
o-Xylene	M	2760	mg/kg	0.01	933	0.01	2.80	0.20	0.28
Methyl Tert-Butyl Ether	M	2760	mg/kg	0.1	837	0.01	166.00	2.02	2.80
Naphthalene	M	2800	mg/kg	0.046	933	0.01	1000.00	8.92	19.94
Acenaphthylene	M	2800	mg/kg	0.046	933	0.01	1000.00	0.92	2.05
Acenaphthene	M	2800	mg/kg	0.04	933	0.01	1000.00	0.83	1.85
Fluorene	M	2800	mg/kg	0.046	933	0.01	1000.00	0.92	2.05
Phenanthrene	M	2800	mg/kg	0.075	933	0.02	831.00	9.67	39.88
Anthracene	M	2800	mg/kg	0.046	933	0.01	1000.00	2.10	4.68
Fluoranthene	M	2800	mg/kg	0.085	933	0.02	1260.00	15.02	57.51
Pyrene	M	2800	mg/kg	0.046	933	0.01	953.00	10.83	40.00
Benzo[a]anthracene	M	2800	mg/kg	0.07	933	0.01	568.00	6.08	25.46
Chrysene	M	2800	mg/kg	0.07	933	0.02	1000.00	6.31	23.00
Benzo[b]fluoranthene	M	2800	mg/kg	0.075	933	0.02	378.00	7.67	34.94
Benzo[k]fluoranthene	M	2800	mg/kg	0.07	933	0.01	1200.00	2.75	10.14
Benzo[a]pyrene	M	2800	mg/kg	0.075	933	0.02	303.00	5.33	23.76
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.06	933	0.02	594.00	4.04	16.59
Dibenz(a,h)Anthracene	M	2800	mg/kg	0.115	933	0.02	655.00	1.50	4.44
Benzo(g,h,i)perylene	M	2800	mg/kg	0.06	933	0.02	223.00	3.69	16.28
Total (16 PAH)	M	2800	mg/kg	0.96					
Carbazole	M	2800	mg/kg	0.1					
Phenol	M	2920	mg/kg	0.06	933	0.01	13.80	0.04	0.10
Cresols	M	2920	mg/kg	0.01					
Xylenols	M	2920	mg/kg	0.02					
1-Naphthol	M	2920	mg/kg	0.01					
Trimethylphenols	M	2920	mg/kg	0.02					
Total Phenols	M	2920	mg/kg	0.02					

| Lab/Job No. | 19/1102-E2 | 19/1102-E3 | 19/2004-E8 | 19/2006-E6 | 19/2004-E9 | 19/2004-E6 | 19/2016-E6 | 19/2016-E5 | 19/2016-E4 | 19/2016-E3 | 19/2016-E2 | 19/2016-E1 | 19/2004-E5 | 19/2004-E4 | 19/2004-E3 | 19/2004-E2 | 19/2004-E1 | 19/2004-E7 | 19/2004-E8 | 19/2004-E9 | 19/2004-E10 | 19/2004-E11 | 19/2004-E12 | 19/2004-E13 | 19/2004-E14 | 19/2004-E15 | 19/2004-E16 | 19/2004-E17 | 19/2004-E18 | 19/2004-E19 | 19/2004-E20 | 19/2004-E21 | 19/2004-E22 | 19/2004-E23 | 19/2004-E24 | 19/2004-E25 | 19/2004-E26 |

Project P19-001

| Client: Rodgers Lowe Environmental | Lab/Job No. | 2612142-45 | 2612142-45 | 2612142-45 | 2612142-45 | 2612142-45 | 2612142-45 | 2612142-45 | 2612142-52 | 2612142-52 | 2612142-52

Project P19-005

| | | | | | | | | | | | | K39 | | AC31 | | AC01 | | P21 | | | | | | | | | | | |

Project P19-025

| Client: Rodney Lowe Environmental | Lab.Job No. | | |

Project P15-025

| Client: Rodgers Lead Environmental | Lab/Job No. | | |

Project P21-022

Client: Rodgers Lawn Environmental

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Project PS1-022

| | | |

| Project: P21-022 | | |

Project 713-SEE

| Client: Rudgwick Lower Environmental | Lab Job No. | 20/21/0142 | 20/21/0142 | 20/21/0142

Project P21-021														W207																		W209														W209C													
Client: Rodney Lowe Environmental				Lab Job No.																																																				
				Lab Sample ID:	20210610-234106	20210610-234107	20210610-234108	20210610-234109	20210610-234110	20210610-234111	20210610-234112	20210610-234113	20210610-234114	20210610-234115	20210610-234116	20210610-234117	20210610-234118	20210610-234119	20210610-234120	20210610-234121	20210610-234122	20210610-234123	20210610-234124	20210610-234125	20210610-234126	20210610-234127	20210610-234128	20210610-234129	20210610-234130	20210610-234131	20210610-234132	20210610-234133	20210610-234134	20210610-234135	20210610-234136	20210610-234137	20210610-234138	20210610-234139	20210610-234140	20210610-234141	20210610-234142	20210610-234143	20210610-234144	20210610-234145	20210610-234146	20210610-234147	20210610-234148	20210610-234149	20210610-234150	20210610-234151	20210610-234152	20210610-234153	20210610-234154	20210610-234155	20210610-234156	20210610-234157	20210610-234158	20210610-234159	20210610-234160
				Client Sample Ref.:	4A Comp - 4	4A Comp - 5	4A Comp - 6	4A Comp - 7	4A Comp - 8	4A Comp - 9	4A Comp - 10	4A Comp - 11	4A Comp - 12	4A Comp - 13	4A Comp - 14	4A Comp - 15	4A Comp - 16	4A Comp - 17	4A Comp - 18	4A Comp - 19	4A Comp - 20	4A Comp - 21	4A Comp - 22	4A Comp - 23	4A Comp - 24	4A Comp - 25	4A Comp - 26	4A Comp - 27	4A Comp - 28	4A Comp - 29	4A Comp - 30	4A Comp - 31	4A Comp - 32	4A Comp - 33	4A Comp - 34	4A Comp - 35	4A Comp - 36	4A Comp - 37	4A Comp - 38	4A Comp - 39	4A Comp - 40	W209-1	W209-2	W209-3	W209-4	W209-5	W209-6	W209-7	W209-8	W209-9	W209-10	W209-11	W209-12	W209-13	W209-14	W209-15	W209-16	W209-17	W209-18	W209-19	W209-20
				Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				Top Depth (m):	0.00-0.30	0.00-0.30	0.00-0.30

| Project P21-022 | | |

Project P21-022

| | | |

Project: P21-022

| Client: Rodgers Lewis Environmental | Lab/Job No.: | 1820-S1-02 | 1820-S1-03 | 1820-S1-04 | 1820-S1-05 | 1820-S1-06 | 1820-S1-07 | 1820-S1-08 | 1820-S1-09 | 1820-S1-10 | 1820-S1-11 | 1820-S1-12 | 1820-S1-13 | 1820-S1-14 | 1820-S1-15 | 1820-S1-16 | 1820-S1-17 | 1820-S1-18 | 1820-S1-19 | 1820-S1-20 | 1820-S1-21 |

| Project P21-022 | | |

| Project PS1-023 | | |

| Project P19-025 | | | | | | | | | | | Benchmark Material | | | | | | | | | | |

Project PS1488

Client: Rodgers Leask Environmental																	
								Lab Job No.:						AC29		AC31		~AA31	
								Lab Sample ID.:						1343585	1343630	1343582	1343583	1811138-32	1811139-33
								Client Sample Ref.:										18/03/2021	18/03/2021
							SAQL Commercial GAC (SOM 1%)		W94-06	W94-07	W94-08	W94-09	AE30-2	AE30-1	AC31-1	AC31-2	4E-E.10	4E-E.10
								Sample Type:						SOIL	SOIL	SOIL	SOIL	SOLID	SOLID
								Top Depth (m):						1.4	0.3	0.3	1.6	0.4G.40	1.50-1.55
								Bottom Depth (m):											
								Date Sampled:						16/07/2021	16/07/2021	16/07/2021	16/07/2021	26/11/2018	26/11/2018
								Asbestos Lab:											
Determinand	Accred.	SOP	Units	LOD	No. of Samples	Min	Max	Average - all	Upper 95th percentile										
ACM Type	U	2192		N/A	126														
Asbestos Identification	U	2192		N/A	360										No Asbestos Detected		No Asbestos Detected		
Asbestos by Gravimetry	U	2192	%	0.001	189	0.001	0.9872	0.0031	0.02										
Total Asbestos	U	2192	%	0.001	5														
Moisture	N	2040	%	0.02	311									2.2	2.8	1.6	5.4		
Soil Colour	N	2040		N/A	794									Grey	Grey	Grey	Brown	Dark Brown	Dark Brown
Other Material	N	2040		N/A	794									None	Stones	Stones	Stones	Sandy Loam	Sandy Loam
Soil Texture	N	2040		N/A	794									concrete	concrete	concrete	Sand	Vegetation	Vegetation
pH	M	2010	pH Units	1	723									> 12.0	12	11.1	10.8	8.66	11.6
Cyanide (Total)	M	2300	mg/kg	1	933	0.50	449.00	4.07	7.40		<1	<1	1.43	<1	< 0.50	1.20	< 0.50	2.70	<1
Ammoniacal Nitrogen	M	2425	mg/kg	12	815	0.50	919.00	45.35	261.76						0.68	< 0.50	< 0.50	< 0.50	<12
Iron (Total)	N	2430	mg/kg	10000	933	4370.00	2360000.00	33398.25	270000.00		87000.00	60000.00	86000.00	72000.00	33000.00	26000.00	7200.00	10000.00	180000.00
Arsenic	M	2450	mg/kg	0.6	933	0.50	125.00	10.26	16.98	8.40E+02	7.90	5.52	6.65	7.94	15.00	16.00	22.00	24.00	10.90
Cadmium	M	2450	mg/kg	0.02	933	0.02	39.20	0.63	2.46	410	0.39	1.48	0.39	0.31	< 0.10	0.41	0.18	0.41	<0.2
Chromium	M	2450	mg/kg	0.9	933	0.90	1200.00	146.85	479.70	8.60E+03	162.00	137.00	199.00	117.00	470.00	320.00	62.00	120.00	129.00
Manganese	M	2450	mg/kg	13	933	36.00	406600.00	10887.64	31870.00		16000.00	13300.00	20300.00	11700.00	27000.00	18000.00	5000.00	7900.00	7510.00
Copper	M	2450	mg/kg	1.4	933	1.40	440.00	24.82	51.55	68000	57.80	51.20	34.00	25.60	440.00	210.00	47.00	73.00	19.70
Mercury	M	2450	mg/kg	0.14	933	0.05	6.12	0.57	1.45	11000	<0.14	<0.14	<0.14	<0.14	0.43	0.27	< 0.10	0.15	<1.4
Nickel	M	2450	mg/kg	0.2	933	0.20	307.00	21.85	47.96	9.80E+02	14.40	14.10	13.10	13.10	13.00	13.00	5.70	16.00	18.60
Lead	M	2450	mg/kg	0.7	933	0.70	7190.00	126.61	313.00	2.33E+03	141.00	91.20	83.00	62.60	35.00	33.00	8.90	47.00	29.90
Selenium	M	2450	mg/kg	1	933	0.20	64.10	3.54	14.39	12000	5.40	3.96	6.70	4.43	< 0.20	< 0.20	< 0.20	1.10	<10
Vanadium	U	2450	mg/kg	2	933	1.80	2680.00	238.18	700.90	9000	160.00	156.00	276.00	204.00	506.00	660.00	160.00	260.00	123.00
Zinc	M	2450	mg/kg	1.5	933	1.50	31000.00	388.78	930.90	7.30E+03	262.00	208.00	265.00	302.00	37.00	47.00	37.00	260.00	236.00
Organic Matter	M	2625	%	0.35	815									< 0.40	0.55	< 0.40	1.40	6.74	3.21
Aliphatic VPH >C5-C6	N	2990	mg/kg	0.02	933	0.01	46.50	0.23	1.00	3200.00	<0.04	<0.04	<0.04	<0.04	< 1.0	< 1.0	< 1.0	< 1.0	<0.02
Aliphatic VPH >C6-C7	N	2990	mg/kg	0.02	0	0.05	0.05	0.05	0.05										
Aliphatic VPH >C7-C8	M	2990	mg/kg	0.02	0	0.05	0.05	0.05	0.05										
Aliphatic VPH >C8-C9 (Sum)	M	2990	mg/kg	0.04	933	0.01	113.00	0.35	1.60	7800	<0.04	<0.04	<0.04	<0.04	< 1.0	< 1.0	< 1.0	< 1.0	0.03
Aliphatic VPH >C9-C10	M	2990	mg/kg	0.02	933	0.01	2110.00	2.67	1.00	2.00E+03	<0.04	<0.04	0.10	<0.04	< 1.0	< 1.0	< 1.0	< 1.0	0.03
Total Aliphatic VPH >C5-C10	M	2990	mg/kg	0.04															
Aliphatic EPH >C10-C12	M	2990	mg/kg	0.02	933	0.01	651.00	2.61	5.48	9.70E+03	<0.04	<0.04	<0.04	<0.04	< 1.0	< 1.0	< 1.0	< 1.0	0.10
Aliphatic EPH >C12-C16	N	2990	mg/kg	0.1	933	0.10	5407.00	10.29	39.20	5.50E+04	1.40	1.15	0.67	1.00	130.00	< 1.0	< 1.0	< 1.0	<0.1
Aliphatic EPH >C16-C21	N	2990	mg/kg	0.1	932	0.10	3636.00	59.89	112.75	1.00E+05	9.70	6.85	17.30	10.10	400.00	< 1.0	< 1.0	< 1.0	1.50
Aliphatic EPH >C21-C35	N	2990	mg/kg	0.1	933	0.10	72.77	212.35	1.00E+05	86.80	83.20	299.00	118.00	45.00	< 1.0	< 1.0	< 1.0	< 1.0	30.00
Aliphatic EPH >C35-C40	N	2990	mg/kg	0.1	933	0.10	948.00	52.85	119.70	1.00E+05	27.60	14.40	104.00	38.70	< 1.0	< 1.0	< 1.0	< 1.0	8.90
Total Aliphatic EPH >C10-C35	N	2990	mg/kg	0.1															
Total Aliphatic EPH >C10-C40	M	2990	mg/kg	0.1											346.00	< 5.0	< 5.0	< 5.0	39.00
Aromatic VPH >C5-C7	M	2990	mg/kg	0.02	933	0.01	50.00	0.25	1.00	26000	<0.08	<0.04	<0.04	<0.04	< 1.0	< 1.0	< 1.0	< 1.0	<0.02
Aromatic VPH >C7-C8	U	2990	mg/kg	0.02	933	0.01	45.00	0.24	1.00	56000	<0.04	<0.04	<0.04	<0.04	41.00	< 1.0	< 1.0	< 1.0	<0.02
Aromatic VPH >C8-C10	N	2990	mg/kg	0.02	933	0.01	44.50	0.29	1.00	3500	<0.08	<0.04	0.07	<0.04	< 1.0	< 1.0	< 1.0	< 1.0	<0.02
Total Aromatic VPH >C5-C10	N	2990	mg/kg	0.02															
Aromatic EPH >C10-C12	N	2990	mg/kg	0.02	933	0.01	1000.00	3.38	9.76	26000.00	<0.08	<0.04	<0.04	<0.04	< 1.0	< 1.0	< 1.0	< 1.0	0.05
Aromatic EPH >C12-C16	N	2990	mg/kg	0.1	933	0.05	635.00	11.20	33.01	56000.00	0.95	1.31	1.07	1.05	< 1.0	< 1.0	< 1.0	< 1.0	0.46
Aromatic EPH >C16-C21	N	2990	mg/kg	0.1	933	0.10	4330.00	85.12	213.00	9400	6.64	5.23	8.63	6.26	< 1.0	< 1.0	< 1.0	< 1.0	3.63
Aromatic EPH >C21-C35	M	2790	mg/kg	0.1	933	0.10	5480.00	151.66	500.70	2.60E+04	99.20	97.50	116.00	81.40	19.00	< 1.0	< 1.0	< 1.0	21.70
Aromatic EPH >C35-C40	N	2790	mg/kg	0.1	933	0.05	1586.00	42.72	160.76	5.60E+04	24.30	14.80	65.00	32.00	< 1.0	< 1.0	< 1.0	< 1.0	13.10
Total Aromatic EPH >C10-C35	M	2790	mg/kg	0.1															
Total Aromatic EPH >C10-C40	M	2790	mg/kg	0.1											60.00	< 5.0	< 5.0	< 5.0	39.30
Total VPH >C5-C10	M	2790	mg/kg	0.1															76.50
Total EPH >C10-C35	N	2990	mg/kg	0.1															
Total EPH >C10-C40	N	2990	mg/kg	0.1											650.00	< 10	< 10	< 10	39.30
Benzene	M	2760	mg/kg	0.06	933	0.001	8.97	0.16	0.19	27	<0.06	<0.04	<0.04	<0.04	0.011	0.052	< 0.001	< 0.001	<0.02
Toluene	M	2760	mg/kg	0.07	933	0.001	1.45	0.13	0.14	56000	<0.008	<0.008	<0.008	<0.008	0.006	0.001	< 0.001	< 0.001	<0.07
Ethylbenzene	M	2760	mg/kg	0.04	933	0.001	5.67	0.07	0.08	5700	<0.012	<0.012	<0.012	<0.012	<0.012	0.001	< 0.001	< 0.001	<0.04
m & p-Xylene	M	2760	mg/kg	0.1	933	0.001	16.40	0.17	0.20	5900	<0.024	<0.024	<0.024	<0.024	< 0.001	0.004	0.006	< 0.001	<0.1
o-Xylene	M	2760	mg/kg	0.1	933	0.001	2.04	0.15	0.20	6600	<0.012	<0.012	<0.012	<0.012	0.002	< 0.001	0.002	< 0.001	<0.1
Methyl Tert-Butyl Ether	M	2760	mg/kg	0.1							<0.32	<0.32	<0.32	<0.32	< 0.001	< 0.001	< 0.001	< 0.001	<0.1
Naphthalene	M	2800	mg/kg	0.045	933	0.01	1050.00	8.92	19.34	1600	0.25	0.12	0.16	0.19	< 0.10	< 0.10	< 0.10	< 0.10	0.09
Acenaphthene	N	2800	mg/kg	0.06	933	0.01	204.00	1.71	5.70	83000	0.05	0.05	0.05	0.05	< 0.10	< 0.10	< 0.10	< 0.10	0.03
Acenaphthene	M	2800	mg/kg	0.04	933	0.01	95.70	0.33	0.89	84000	0.04	0.02	0.05	0.12	< 0.10	< 0.10	< 0.10	< 0.10	<0.008
Fluorene	N	2800	mg/kg	0.06	933	0.01	166.00	2.00	7.49	63000	0.04	0.03	0.07	0.14	< 0.10	< 0.10	< 0.10	< 0.10	0.04
Phenanthrene	M	2800	mg/kg	0.075	933	0.02	831.00	9.67	39.88	22000	0.45	0.26	0.56	2.06	0.56	< 0.10	< 0.10	< 0.10	0.18
Anthracene	M	2800	mg/kg	0.06	933	0.02	254.00	3.12	10.97	520000	0.12	0.06	0.29	0.39	0.19	< 0.10	< 0.10	< 0.10	0.06
Fluoranthene	M	2800	mg/kg	0.085	933	0.02	1260.00	15.02	57.51	23000	0.69	0.49	1.03	3.80	1.80	0.34	< 0.10	< 0.10	0.22
Pyrene	M	2800	mg/kg	0.075	933	0.02	953.00	10.83	40.00	54000	0.65	0.44	0.96	3.28	1.70	0.35	< 0.10	< 0.10	0.17
Benzo[a]anthracene	M	2800	mg/kg	0.07	933	0.01	358.00	6.08	25.46	170	0.53	0.44	0.70	2.98	0.88	0.22	< 0.10	< 0.10	0.13
Chrysene	M	2800	mg/kg	0.05	933	0.01	359.00	5.55	23.55	350	0.64	0.48	0.82	2.92	0.78	0.40	< 0.10	< 0.10	0.14
Benzo[b]fluoranthene	M	2800	mg/kg	0.075	933	0.02	378.00	7.67	34.94	44	1.07	0.75	1.33	3.80	1.40	0.40	< 0.10	< 0.10	0.15
Benzo[k]fluoranthene	M	2800	mg/kg	0.07	933	0.01	159.00	2.73	12.14	1200	0.30	0.31	0.39	1.81	0.51	0.19	< 0.10	< 0.10	0.05
Benzo[b]pyrene	M	2800	mg/kg	0.075	933	0.02	303.00	5.33	23.76	35	0.63	0.58	0.81	3.42	1.10	0.30	< 0.10	< 0.10	0.10
Indeno[1,2,3-cd]Pyrene	M	2800	mg/kg	0.06	933	0.02	194.00	4.04	16.00	500	0.50	0.41	0.66	1.93	0.77	< 0.10	< 0.10	< 0.10	0.13
Dibenz[a,h]Anthracene	N	2800	mg/kg	0.115	933	0.02	655.00	1.50	4.44	3.5	0.16	0.12	0.19	0.85	0.15	< 0.10	< 0.10	< 0.10	0.03
Benzo[g,h,i]perylene	M	2800	mg/kg	0.13	933	0.02	223.00	3.69	16.28	3600	0.63	0.49	0.84	2.11	0.72	< 0.10	< 0.10	< 0.10	0.14
Total 16 PAH's	N	2800	mg/kg	0.56											11.00	2.20	< 2.0	< 2.0	1.92
Benzocarbazole	M	2800	mg/kg	0.05															
Phenol	M	2920	mg/kg	0.04	933	0.01	13.80	0.04	0.10	760	<0.01	<0.01	<0.01	<0.01	< 0.020	< 0.020	< 0.020	< 0.020	<0.01
Cresols	M	2920	mg/kg	0.01															
Xylenols	M	2920	mg/kg	0.015															
1-Naphthol	N	2920	mg/kg	0.02															
Trimethylphenols	M	2920	mg/kg	0.02															
Total Phenols	M	2920	mg/kg	0.02															

Appendix D: Chemical Laboratory Results

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	25-17778-2		
Initial Date of Issue:	10-Jun-2025	**Date of Re-Issue:**	13-Jun-2025
Re-Issue Details:	This report has been revised and directly supersedes 25-17778-1 in its entirety		
Client	*Rodgers Leask Environmental*		
Client Address:	*Office 225* *2430/2440 Aztec West* *Almoundsbury* *Bristol* *BS32 4AQ*		
Contact(s):	*Aimee Meredith-Smith* *Chris Wilson* *David McCarroll* *Ruth Hardy*		
Project	*P18-669*		
Quotation No.:	*Q25-37295*	**Date Received:**	29-May-2025
Order No.:	136787	**Date Instructed:**	29-May-2025
No. of Samples:	*13*		
Turnaround (Wkdays):	14	**Results Due:**	17-Jun-2025
Date Approved:	13-Jun-2025		

Approved By:

Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental						**Chemtest Job No.:**	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778
Quotation No.: Q25-37295						**Chemtest Sample ID.:**	1979520	1979521	1979522	1979523	1979524	1979525	1979526
Order No.: 136787						*Client Sample Ref.:*	*6a/6b-SV16*	*6a/6b-SV22B*	*6a/6b-SV22A*	*6a/6b-SV15*	*6a/6b-SV9*	*6a/6b-SV3*	*6a/6b-SV8*
						Sample Type:	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
						Top Depth (m):	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
						Bottom Depth (m):	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
						Date Sampled:	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*
						Time Sampled:	*12:00*	*12:15*	*12:30*	*12:45*	*13:00*	*13:15*	*13:30*
						Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type		N	2192		N/A		-	-	-	-	Fibres/Clumps	-	Fibres/Clumps
Asbestos Identification		U	2192		N/A		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	Chrysotile	No Asbestos Detected	Chrysotile
Asbestos by Gravimetry		U	2192	%	0.001						<0.001		<0.001
Total Asbestos		U	2192	%	0.001						<0.001		<0.001
Moisture		N	2030	%	0.020		10	11	12	9.4	8.7	9.5	9.1
Soil Colour		N	2030		N/A		Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A		Stones	Stones	Stones	Stones and Roots	Stones	Stones and Roots	Stones and Roots
Soil Texture		N	2030		N/A		Sand	Sand	Sand	Loam	Sand	Loam	Loam
pH at 20C		M	2010		4.0		8.4	8.4	9.5	9.1	9.8	9.0	8.9
Cyanide (Total)		M	2300	mg/kg	0.50		3.8	4.1	4.7	5.6	4.1	3.7	4.5
Ammoniacal Nitrogen		M	2425	mg/kg	0.50		1.6	1.6	1.2	0.58	1.0	1.0	0.93
Iron (Total)		N	2430	mg/kg	100		28000	22000	40000	25000	39000	33000	35000
Arsenic		M	2455	mg/kg	0.5		7.2	4.2	6.5	7.0	8.6	6.5	7.5
Cadmium		M	2455	mg/kg	0.10		1.2	0.49	1.1	1.0	3.5	1.3	1.5
Chromium		M	2455	mg/kg	0.5		38	32	110	46	86	49	48
Manganese		M	2455	mg/kg	1.0		3200	2100	5500	2700	5700	2900	3100
Copper		M	2455	mg/kg	0.50		16	11	15	16	140	17	23
Mercury		M	2455	mg/kg	0.05		0.19	0.12	0.15	0.23	0.29	0.27	0.27
Nickel		M	2455	mg/kg	0.50		13	11	14	14	19	16	16
Lead		M	2455	mg/kg	0.50		93	63	95	88	170	160	150
Selenium		M	2455	mg/kg	0.25		0.41	0.29	0.50	0.56	0.92	0.56	0.49
Vanadium		U	2455	mg/kg	0.5		52	46	130	59	130	66	83
Zinc		M	2455	mg/kg	0.50		260	180	260	250	420	480	390
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25		< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00		< 2.0	< 2.0	< 2.0	< 2.0	2.8	4.3	4.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00		6.5	10	8.8	8.8	5.8	10	9.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00		26	27	37	45	18	26	40
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00		65	84	70	74	66	69	66

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental				**Chemtest Job No.:**		25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778
Quotation No.: Q25-37295				**Chemtest Sample ID.:**		1979520	1979521	1979522	1979523	1979524	1979525	1979526
Order No.: 136787				*Client Sample Ref.:*		*6a/6b-SV16*	*6a/6b-SV22B*	*6a/6b-SV22A*	*6a/6b-SV15*	*6a/6b-SV9*	*6a/6b-SV3*	*6a/6b-SV8*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
				Bottom Depth (m):		*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
				Date Sampled:		*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*
				Time Sampled:		*12:00*	*12:15*	*12:30*	*12:45*	*13:00*	*13:15*	*13:30*
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	14	24	17	32	18	14	130
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	98	120	120	130	92	110	120
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	110	150	140	160	110	120	250
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	3.8	2.8	4.2	4.4	2.4	3.7	3.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	3.6	6.2	7.2	35	< 1.0	2.3	7.1
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	45	46	73	320	24	36	100
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	100	97	160	480	63	94	170
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	32	21	29	96	14	18	270
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	150	150	250	840	91	140	280
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	190	170	270	930	100	150	560
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	250	270	360	960	180	250	400
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	300	320	410	1100	220	280	800
Organic Matter		M	2625	%	0.40	13	14	13	15	11	24	11
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	7.6	7.3	7.6	6.4	4.4	6.5	4.7
Acenaphthylene		N	2800	mg/kg	0.10	1.5	0.99	1.3	3.3	0.93	1.2	2.0
Acenaphthene		M	2800	mg/kg	0.10	0.17	0.28	< 0.10	0.23	0.52	0.18	0.20
Fluorene		M	2800	mg/kg	0.10	1.2	0.72	0.79	1.3	0.99	0.81	1.1
Phenanthrene		M	2800	mg/kg	0.10	12	5.9	6.8	9.7	9.2	6.7	8.3
Anthracene		M	2800	mg/kg	0.10	2.7	1.8	2.1	4.4	2.2	1.9	3.2
Fluoranthene		M	2800	mg/kg	0.10	21	8.9	11	22	14	11	18
Pyrene		M	2800	mg/kg	0.10	15	6.7	7.9	23	12	8.4	15
Benzo[a]anthracene		M	2800	mg/kg	0.10	8.6	4.5	5.1	13	7.1	5.3	9.1
Chrysene		M	2800	mg/kg	0.10	8.7	4.7	4.5	13	7.3	4.5	9.1
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	12	6.7	7.3	18	9.6	7.4	13
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	3.8	2.3	2.5	6.1	3.1	2.6	3.7

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental				**Chemtest Job No.:**		25-17778	25-17778	25-17778	25-17778	25-17778	25-17778	25-17778
Quotation No.: Q25-37295				**Chemtest Sample ID.:**		1979520	1979521	1979522	1979523	1979524	1979525	1979526
Order No.: 136787				*Client Sample Ref.:*		*6a/6b-SV16*	*6a/6b-SV22B*	*6a/6b-SV22A*	*6a/6b-SV15*	*6a/6b-SV9*	*6a/6b-SV3*	*6a/6b-SV8*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
				Bottom Depth (m):		*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
				Date Sampled:		*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*
				Time Sampled:		*12:00*	*12:15*	*12:30*	*12:45*	*13:00*	*13:15*	*13:30*
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Benzo[a]pyrene		M	2800	mg/kg	0.10	8.1	4.6	4.8	13	6.8	5.4	9.0
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	6.2	3.2	3.8	9.1	4.7	3.5	6.2
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	1.3	0.73	0.82	1.9	1.1	0.88	1.2
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	5.7	3.1	3.6	8.1	4.5	3.5	5.8
Total Of 16 PAH's		N	2800	mg/kg	2.0	120	62	70	150	88	70	110
Resorcinol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol		M	2920	mg/kg	0.020	< 0.020	0.096	0.094	0.16	0.36	0.12	0.076
Cresols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol		N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.15	0.36	0.12	< 0.10

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental				**Chemtest Job No.:**		25-17778	25-17778	25-17778	25-17778	25-17778	25-17778
Quotation No.: Q25-37295				**Chemtest Sample ID.:**		1979527	1979528	1979529	1979530	1979531	1979532
Order No.: 136787				*Client Sample Ref.:*		*6a/6b-SV14*	*6a/6b-SV21*	*6a/6b-SV20*	*6a/6b-SV19*	*6a/6b-SV13*	*6a/6b-SV7*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
				Bottom Depth (m):		*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
				Date Sampled:		*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*
				Time Sampled:		*13:45*	*14:00*	*14:15*	*14:30*	*14:45*	*15:00*
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
ACM Type		N	2192		N/A	-	-	Fibres/Clumps	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	Amosite	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Asbestos by Gravimetry		U	2192	%	0.001			<0.001			
Total Asbestos		U	2192	%	0.001			<0.001			
Moisture		N	2030	%	0.020	8.8	7.7	10	11	8.0	8.5
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2030		N/A	Stones, Roots, Glass and brick	Stones	Stones, Roots and brick	Stones and Roots	Stones and Roots	Stones and Roots
Soil Texture		N	2030		N/A	Loam	Sand	Loam	Loam	Loam	Loam
pH at 20C		M	2010		4.0	8.9	10.5	9.3	10.4	9.3	9.2
Cyanide (Total)		M	2300	mg/kg	0.50	7.0	2.6	4.1	3.0	3.0	3.1
Ammoniacal Nitrogen		M	2425	mg/kg	0.50	1.1	0.76	1.6	1.4	1.5	0.93
Iron (Total)		N	2430	mg/kg	100	35000	39000	15000	43000	36000	18000
Arsenic		M	2455	mg/kg	0.5	8.3	12	4.0	7.0	11	3.5
Cadmium		M	2455	mg/kg	0.10	1.2	2.7	0.94	0.72	2.8	0.88
Chromium		M	2455	mg/kg	0.5	61	110	21	170	67	24
Manganese		M	2455	mg/kg	1.0	3300	6700	1400	11000	4500	1600
Copper		M	2455	mg/kg	0.50	26	25	8.7	22	25	12
Mercury		M	2455	mg/kg	0.05	0.36	0.26	0.10	0.17	0.43	0.12
Nickel		M	2455	mg/kg	0.50	21	18	8.7	16	22	22
Lead		M	2455	mg/kg	0.50	150	210	67	97	210	92
Selenium		M	2455	mg/kg	0.25	0.65	0.81	< 0.25	0.70	0.83	< 0.25
Vanadium		U	2455	mg/kg	0.5	81	130	31	230	100	31
Zinc		M	2455	mg/kg	0.50	440	430	220	240	490	220
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	3.5	4.4	4.1	2.7	2.0	< 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	9.3	2.8	9.6	11	11	1.6
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	29	24	30	73	31	13
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	91	74	68	160	130	43

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental				**Chemtest Job No.:**		25-17778	25-17778	25-17778	25-17778	25-17778	25-17778
Quotation No.: Q25-37295				**Chemtest Sample ID.:**		1979527	1979528	1979529	1979530	1979531	1979532
Order No.: 136787				*Client Sample Ref.:*		*6a/6b-SV14*	*6a/6b-SV21*	*6a/6b-SV20*	*6a/6b-SV19*	*6a/6b-SV13*	*6a/6b-SV7*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
				Bottom Depth (m):		*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
				Date Sampled:		*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*
				Time Sampled:		*13:45*	*14:00*	*14:15*	*14:30*	*14:45*	*15:00*
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	21	16	16	38	23	14
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	130	110	110	240	170	59
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	150	120	130	280	200	73
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	6.2	3.1	3.5	9.9	3.0	2.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	3.7	5.0	2.8	12	4.8	7.2
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	41	71	43	100	43	85
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	110	150	110	190	120	140
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	24	21	17	29	25	15
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	160	230	160	310	170	240
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	180	250	180	340	190	250
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	290	330	270	550	340	300
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	340	370	300	620	390	330
Organic Matter		M	2625	%	0.40	12	9.3	14	16	15	14
Benzene		M	2760	µg/kg	1.0	< 1.0	1.6	< 1.0	2.3	2.6	1.5
Toluene		M	2760	µg/kg	1.0	1.2	< 1.0	< 1.0	1.5	< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	2.1	1.6	1.8	1.9	2.2	1.4
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	5.3	4.4	5.3	15	5.0	5.6
Acenaphthylene		N	2800	mg/kg	0.10	1.0	1.1	1.3	3.8	0.88	1.2
Acenaphthene		M	2800	mg/kg	0.10	0.21	0.24	< 0.10	0.44	0.14	< 0.10
Fluorene		M	2800	mg/kg	0.10	0.78	1.2	0.78	3.9	0.66	0.99
Phenanthrene		M	2800	mg/kg	0.10	5.1	7.4	6.3	26	4.7	6.7
Anthracene		M	2800	mg/kg	0.10	1.8	1.7	2.4	8.7	1.4	2.5
Fluoranthene		M	2800	mg/kg	0.10	9.4	11	11	31	7.9	11
Pyrene		M	2800	mg/kg	0.10	7.5	7.5	8.3	22	6.4	8.7
Benzo[a]anthracene		M	2800	mg/kg	0.10	4.8	4.7	5.7	12	4.3	5.5
Chrysene		M	2800	mg/kg	0.10	4.1	4.8	5.9	14	4.4	5.7
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	7.3	6.3	7.8	16	6.5	7.6
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	2.4	2.1	2.5	5.7	2.3	2.5

Results - Soil

Project: P18-669

Client: Rodgers Leask Environmental						25-17778	25-17778	25-17778	25-17778	25-17778	25-17778
Quotation No.: Q25-37295		**Chemtest Sample ID.:**				1979527	1979528	1979529	1979530	1979531	1979532
Order No.: 136787		*Client Sample Ref.:*				*6a/6b-SV14*	*6a/6b-SV21*	*6a/6b-SV20*	*6a/6b-SV19*	*6a/6b-SV13*	*6a/6b-SV7*
		Sample Type:				*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
		Top Depth (m):				*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
		Bottom Depth (m):				*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
		Date Sampled:				*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*	*27-May-2025*
		Time Sampled:				*13:45*	*14:00*	*14:15*	*14:30*	*14:45*	*15:00*
		Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
Benzo[a]pyrene		M	2800	mg/kg	0.10	5.2	4.1	5.3	11	4.2	5.6
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	3.8	3.0	3.9	8.0	3.2	4.0
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	0.66	0.72	0.91	1.7	0.72	0.82
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	3.4	2.7	3.6	7.3	3.1	3.5
Total Of 16 PAH's		N	2800	mg/kg	2.0	63	63	71	190	56	72
Resorcinol		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Phenol		M	2920	mg/kg	0.020	0.082	0.095	< 0.020	0.11	< 0.020	< 0.020
Cresols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Xylenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
1-Naphthol		N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Trimethylphenols		M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.11	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
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email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	09 May 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180425-20
Your Reference:	
Location:	Llanwern
Report No:	455315

We received 16 samples on Wednesday April 25, 2018 and 16 of these samples were scheduled for analysis which was completed on Wednesday May 09, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17438052	W140-09		0.00 - 0.00	24/04/2018
17438102	W140-10		0.00 - 0.00	24/04/2018
17438117	W140-11		0.00 - 0.00	24/04/2018
17438127	W140-12		0.00 - 0.00	24/04/2018
17438136	W140-13		0.00 - 0.00	24/04/2018
17438061	W140-14		0.00 - 0.00	24/04/2018
17438071	W140-15		0.00 - 0.00	24/04/2018
17438083	W140-16		0.00 - 0.00	24/04/2018
17438094	W140-09.5		0.00 - 0.00	24/04/2018
17438109	W140-10.5		0.00 - 0.00	24/04/2018
17438121	W140-11.5		0.00 - 0.00	24/04/2018
17438131	W140-12.5		0.00 - 0.00	24/04/2018
17438056	W140-13.5		0.00 - 0.00	24/04/2018
17438066	W140-14.5		0.00 - 0.00	24/04/2018
17438078	W140-15.5		0.00 - 0.00	24/04/2018
17438087	W140-16.5		0.00 - 0.00	24/04/2018

Maximum Sample/Coolbox Temperature (°C) : **9.4**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | Lab Sample No(s) | | | | |

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
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Results Legend

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17438066	W140-14.5		0.00 - 0.00	1kg TUB	S				X			X							X				X
17438056	W140-13.5		0.00 - 0.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X			X			X		X		X						
				1kg TUB	S				X			X							X				X
17438131	W140-12.5		0.00 - 0.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X			X			X		X		X						
				1kg TUB	S				X			X							X				X
17438121	W140-11.5		0.00 - 0.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X			X			X		X		X						
				1kg TUB	S				X			X							X				X
17438109	W140-10.5		0.00 - 0.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X			X			X		X		X						
				1kg TUB	S				X			X							X				X
17438094	W140-09.5		0.00 - 0.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X			X			X		X		X						
				1kg TUB	S				X			X							X				X
17438083	W140-16		0.00 - 0.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X			X			X		X		X		X		X		
				1kg TUB	S				X			X							X				X
17438071	W140-15		0.00 - 0.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X			X			X		X		X		X		X		

Validated

CERTIFICATE OF ANALYSIS

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Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
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TS - Treated Sewage
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RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
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OTH - Other

Lab Sample No(s)			17438066		17438078			17438087		
Customer Sample Reference			W140-14.5		W140-15.5			W140-16.5		
AGS Reference										
Depth (m)			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00		
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S
pH	All	NDPs: 0 Tests: 16	X			X			X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 16			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 16	X			X			X	
Sample description	All	NDPs: 0 Tests: 16	X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 16	X			X			X	
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 16			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 16	X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 16		X			X			X
VOC MS (W)	All	NDPs: 0 Tests: 16			X			X		

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17438052	W140-09	0.00 - 0.00	Dark Brown	Stone/Soil	Stones	None
17438102	W140-10	0.00 - 0.00	Dark Brown	Dry Sample Received	Stones	None
17438117	W140-11	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
17438127	W140-12	0.00 - 0.00	Dark Brown	Stone/Soil	Stones	Vegetation
17438136	W140-13	0.00 - 0.00	Dark Brown	Dry Sample Received	Stones	None
17438061	W140-14	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
17438071	W140-15	0.00 - 0.00	Dark Brown	Stone/Soil	Stones	None
17438083	W140-16	0.00 - 0.00	Dark Brown	Sand	Stones	None
17438094	W140-09.5	0.00 - 0.00	Dark Brown	Sand	Stones	None
17438109	W140-10.5	0.00 - 0.00	Dark Brown	Sand	Stones	Vegetation
17438121	W140-11.5	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
17438131	W140-12.5	0.00 - 0.00	Dark Brown	Sand	Stones	None
17438056	W140-13.5	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	None
17438066	W140-14.5	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	N/A
17438078	W140-15.5	0.00 - 0.00	Dark Brown	Dry Sample Received	Stones	None
17438087	W140-16.5	0.00 - 0.00	Dark Brown	Dry Sample Received	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W140-09	W140-10	W140-11	W140-12	W140-13	W140-14
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018
			SDG Ref	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20
			Lab Sample No.(s)	17438052	17438102	17438117	17438127	17438136	17438061
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5.2	7.9	5.7	6.2	8.1	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 #	<12 M	<12 #	<12 #	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 #	<0.01 M	<0.01 #	<0.01 #	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 #	<0.01 M	<0.01 #	<0.01 #	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 #	<0.015 M	<0.015 #	<0.015 #	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 #	<0.035 M	<0.035 #	<0.035 #	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.24	0.44	0.437	0.264	0.426	0.229
Sulphate, Total potential	<0.06 %	TM132		0.72	1.32	1.31	0.792	1.28	0.687
Soil Organic Matter (SOM)	<0.35 %	TM132		3.45 #	2.76 #	1.09 #	1.1 #	2.4 #	2.93 #
pH	1 pH Units	TM133		11.3 #	9.72 #	10.2 M	9.39 #	9.65 #	8.54 M
Cyanide, Total	<1 mg/kg	TM153		<1 #	<1 #	<1 M	<1 #	<1 #	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 #	11 #	9.51 M	10.3 #	8.83 #	9.59 M
Cadmium	<0.02 mg/kg	TM181		1.9 #	1.38 #	2.74 M	2.75 #	1.41 #	3.44 M
Chromium	<0.9 mg/kg	TM181		914 #	31.2 #	<9 M	<9 #	3.91 #	<9 M
Copper	<1.4 mg/kg	TM181		18.6 #	12.4 #	24.9 M	15.4 #	14.7 #	19.4 M
Iron	<1000 mg/kg	TM181		211000 #	151000 #	322000 #	309000 #	159000 #	181000 #
Lead	<0.7 mg/kg	TM181		36.4 #	30.9 #	39 M	22.6 #	11.7 #	62.2 M
Manganese	<0.13 mg/kg	TM181		41000 #	4790 #	3880 M	2340 #	5110 #	3520 M
Mercury	<0.14 mg/kg	TM181		<1.4 #	<0.14 #	<1.4 M	<1.4 #	<0.14 #	<1.4 M
Nickel	<0.2 mg/kg	TM181		8.98 #	11.4 #	48.6 M	58.2 #	12.5 #	15.4 M
Selenium	<1 mg/kg	TM181		15 #	1.86 #	<10 #	<10 #	1.59 #	<10 #
Vanadium	<0.2 mg/kg	TM181		655 #	79.2 #	268 #	279 #	115 #	54 #
Zinc	<1.9 mg/kg	TM181		107 #	113 #	71.5 M	63 #	57.2 #	195 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.339	0.514	0.419	0.497	0.609	0.299
Calcium	<21 mg/kg	TM224		213000	131000	80300	68200	131000	86700
Magnesium	<8 mg/kg	TM224		13200	15000	10800	10300	18300	13900
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0782 #	0.521 #	0.646 M	0.811 #	0.523 #	0.507 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W140-15	W140-16	W140-09.5	W140-10.5	W140-11.5	W140-12.5
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018
			SDG Ref	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20
			Lab Sample No.(s)	17438071	17438083	17438094	17438109	17438121	17438131
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.7	0.68	6.5	9.2	5.3	5.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.297	0.618				
Sulphate, Total potential	<0.06 %	TM132		0.891	1.85				
Soil Organic Matter (SOM)	<0.35 %	TM132		3.38 #	1.93 #	2.31 #	1.26 #	0.94 #	0.921 #
pH	1 pH Units	TM133		8.66 #	9.74 M	11.7 M	10.3 M	9.96 M	9.41 M
Cyanide, Total	<1 mg/kg	TM153		<1 #	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.7 #	14.1 M	<6 M	8.86 M	8.01 M	8.73 M
Cadmium	<0.02 mg/kg	TM181		1.62 #	1.54 M	1.79 M	1.13 M	2.44 M	2.2 M
Chromium	<0.9 mg/kg	TM181		9.6 #	26.6 M	863 M	92.6 M	27 M	12.5 M
Copper	<1.4 mg/kg	TM181		16.6 #	31.9 M	16 M	13.6 M	14.7 M	19.6 M
Iron	<1000 mg/kg	TM181		192000 #	193000 #	195000 #	145000 #	267000 #	260000 #
Lead	<0.7 mg/kg	TM181		28.1 #	48 M	32.8 M	21 M	18.1 M	12.7 M
Manganese	<0.13 mg/kg	TM181		5750 #	6730 M	38100 M	7750 M	5190 M	4340 M
Mercury	<0.14 mg/kg	TM181		<0.14 #	<0.14 M	<1.4 M	<0.14 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		21.6 #	25.3 M	9.96 M	13.9 M	31.3 M	44.6 M
Selenium	<1 mg/kg	TM181		1.46 #	<1 #	16.6 #	3.95 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		140 #	108 #	691 #	132 #	213 #	282 #
Zinc	<1.9 mg/kg	TM181		116 #	162 M	84.2 M	102 M	57.2 M	47.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.566	0.416				
Calcium	<21 mg/kg	TM224		119000	142000				
Magnesium	<8 mg/kg	TM224		17200	17500				
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.718 #	0.448 M				

Validated

CERTIFICATE OF ANALYSIS

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Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W140-13.5	W140-14.5	W140-15.5	W140-16.5		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	24/04/2018	24/04/2018	24/04/2018	24/04/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	25/04/2018	25/04/2018	25/04/2018	25/04/2018		
			SDG Ref	180425-20	180425-20	180425-20	180425-20		
			Lab Sample No.(s)	17438056	17438066	17438078	17438087		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	13	6.6	4.2		
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	<12 #		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 #		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 #		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 #		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 #		
Soil Organic Matter (SOM)	<0.35 %	TM132		1.42 #	2.12 #	0.762 #	0.996 #		
pH	1 pH Units	TM133		8.83 M	8.94 M	9.7 #	10 #		
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 #		
Arsenic	<0.6 mg/kg	TM181		<6 M	11 M	6.67 #	10 #		
Cadmium	<0.02 mg/kg	TM181		1.4 M	2.46 M	2.55 #	1.61 #		
Chromium	<0.9 mg/kg	TM181		18.5 M	<9 M	149 #	197 #		
Copper	<1.4 mg/kg	TM181		<14 M	18.9 M	18 #	13.9 #		
Iron	<1000 mg/kg	TM181		90500 #	244000 #	233000 #	188000 #		
Lead	<0.7 mg/kg	TM181		18.8 M	34.2 M	31.5 #	24.9 #		
Manganese	<0.13 mg/kg	TM181		3190 M	4380 M	9550 #	14700 #		
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 #	<0.14 #		
Nickel	<0.2 mg/kg	TM181		14.8 M	14.7 M	141 #	36.1 #		
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	3.31 #		
Vanadium	<0.2 mg/kg	TM181		76.5 #	60 #	288 #	235 #		
Zinc	<1.9 mg/kg	TM181		90.8 M	96.3 M	89.1 #	107 #		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W140-09	W140-10	W140-11	W140-12	W140-13	W140-14
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018
			SDG Ref	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20
			Lab Sample No.(s)	17438052	17438102	17438117	17438127	17438136	17438061
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		100	105	104	105	105	101
Acenaphthene-d10 % recovery**	%	TM218		101	106	103	103	106	102
Phenanthrene-d10 % recovery**	%	TM218		101	100	97.3	103	101	100
Chrysene-d12 % recovery**	%	TM218		103	96.7	88.2	97.2	93.6	94.3
Perylene-d12 % recovery**	%	TM218		106	115	109	97.5	112	103
Naphthalene	<0.009 mg/kg	TM218		0.182 #	0.311 #	0.101 M	0.0563 #	0.118 #	0.704 M
Acenaphthylene	<0.012 mg/kg	TM218		0.04 #	0.141 #	0.014 M	0.0143 #	0.0257 #	0.89 M
Acenaphthene	<0.008 mg/kg	TM218		0.12 #	0.037 #	<0.008 M	<0.008 #	0.0145 #	0.0839 M
Fluorene	<0.01 mg/kg	TM218		0.0569 #	0.148 #	0.0127 M	0.0154 #	0.0228 #	1.3 M
Phenanthrene	<0.015 mg/kg	TM218		0.69 #	0.762 #	0.13 M	0.0949 #	0.207 #	6.65 M
Anthracene	<0.016 mg/kg	TM218		0.153 #	0.283 #	0.0304 M	0.021 #	0.0504 #	2.68 M
Fluoranthene	<0.017 mg/kg	TM218		1.29 #	1.41 #	0.295 M	0.153 #	0.438 #	6.22 M
Pyrene	<0.015 mg/kg	TM218		1.11 #	1.04 #	0.227 M	0.114 #	0.345 #	4.27 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.839 #	0.556 #	0.119 M	0.0682 #	0.185 #	2.14 M
Chrysene	<0.01 mg/kg	TM218		0.842 #	0.549 #	0.134 M	0.0605 #	0.234 #	2.99 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.52 #	0.596 #	0.179 M	0.0708 #	0.239 #	2.65 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.612 #	0.342 #	0.0946 M	0.0911 #	0.108 #	0.832 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.969 #	0.535 #	0.123 M	0.0624 #	0.168 #	1.85 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.703 #	0.318 #	0.0788 M	0.0495 #	0.113 #	1.08 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.225 #	0.0997 #	<0.023 M	<0.023 #	0.0337 #	0.311 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.868 #	0.417 #	0.116 M	0.0649 #	0.161 #	1.31 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		10.2	7.54	1.65	0.937	2.46	36

Validated

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W140-15	W140-16	W140-09.5	W140-10.5	W140-11.5	W140-12.5
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018
			SDG Ref	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20
			Lab Sample No.(s)	17438071	17438083	17438094	17438109	17438121	17438131
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		100	103	103	103	99.5	99.8
Acenaphthene-d10 % recovery**	%	TM218		99.7	103	102	104	100	99.9
Phenanthrene-d10 % recovery**	%	TM218		93.5	96.6	94.4	97.4	99.3	93.8
Chrysene-d12 % recovery**	%	TM218		86.3	95.8	93.6	98.3	99.5	89.5
Perylene-d12 % recovery**	%	TM218		100	109	110	109	101	94.1
Naphthalene	<0.009 mg/kg	TM218		0.196 #	0.0747 M	0.164 M	0.235 M	0.0903 M	0.103 M
Acenaphthylene	<0.012 mg/kg	TM218		0.055 #	0.02 M	0.0769 M	0.079 M	<0.012 M	0.0201 M
Acenaphthene	<0.008 mg/kg	TM218		0.0196 #	<0.008 M	0.0481 M	0.0251 M	<0.008 M	0.0131 M
Fluorene	<0.01 mg/kg	TM218		0.0552 #	0.0188 M	0.0459 M	0.0697 M	<0.01 M	0.0218 M
Phenanthrene	<0.015 mg/kg	TM218		0.369 #	0.14 M	0.464 M	0.399 M	0.129 M	0.147 M
Anthracene	<0.016 mg/kg	TM218		0.105 #	0.0431 M	0.139 M	0.138 M	0.0233 M	0.0407 M
Fluoranthene	<0.017 mg/kg	TM218		0.657 #	0.286 M	1.02 M	0.865 M	0.244 M	0.255 M
Pyrene	<0.015 mg/kg	TM218		0.491 #	0.239 M	0.844 M	0.649 M	0.179 M	0.189 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.239 #	0.118 M	0.627 M	0.374 M	0.107 M	0.0891 M
Chrysene	<0.01 mg/kg	TM218		0.266 #	0.128 M	0.617 M	0.387 M	0.144 M	0.109 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.365 #	0.179 M	0.885 M	0.38 M	0.204 M	0.106 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.191 #	0.0861 M	0.405 M	0.216 M	0.0736 M	0.0531 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.227 #	0.114 M	0.695 M	0.361 M	0.102 M	0.0768 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.167 #	0.0857 M	0.502 M	0.226 M	0.0765 M	0.0555 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0466 #	0.0235 M	0.155 M	0.0736 M	0.026 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.21 #	0.11 M	0.662 M	0.302 M	0.106 M	0.0737 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.66	1.67	7.35	4.78	1.51	1.35

Validated

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W140-13.5	W140-14.5	W140-15.5	W140-16.5		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	24/04/2018	24/04/2018	24/04/2018	24/04/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	25/04/2018	25/04/2018	25/04/2018	25/04/2018		
			SDG Ref	180425-20	180425-20	180425-20	180425-20		
			Lab Sample No.(s)	17438056	17438066	17438078	17438087		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		105	100	107	104		
Acenaphthene-d10 % recovery**	%	TM218		105	99.1	106	104		
Phenanthrene-d10 % recovery**	%	TM218		94.6	97.7	104	94.2		
Chrysene-d12 % recovery**	%	TM218		85.9	88.7	97.3	88.8		
Perylene-d12 % recovery**	%	TM218		99.3	84.7	99	106		
Naphthalene	<0.009 mg/kg	TM218		0.049 M	0.0821 M	0.13 #	0.0423 #		
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0274 M	0.0364 #	0.0173 #		
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.00923 M	0.0283 #	<0.008 #		
Fluorene	<0.01 mg/kg	TM218		0.013 M	0.0313 M	0.0344 #	0.0113 #		
Phenanthrene	<0.015 mg/kg	TM218		0.0853 M	0.176 M	0.339 #	0.0596 #		
Anthracene	<0.016 mg/kg	TM218		0.023 M	0.0589 M	0.0706 #	0.0212 #		
Fluoranthene	<0.017 mg/kg	TM218		0.123 M	0.301 M	0.644 #	0.124 #		
Pyrene	<0.015 mg/kg	TM218		0.105 M	0.225 M	0.528 #	0.109 #		
Benz(a)anthracene	<0.014 mg/kg	TM218		0.052 M	0.132 M	0.328 #	0.0507 #		
Chrysene	<0.01 mg/kg	TM218		0.0627 M	0.11 M	0.312 #	0.0557 #		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0826 M	0.146 M	0.397 #	0.0678 #		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0315 M	0.0615 M	0.161 #	0.0248 #		
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0467 M	0.105 M	0.323 #	0.0451 #		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0286 M	0.0684 M	0.206 #	0.028 #		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	0.0577 #	<0.023 #		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0417 M	0.0823 M	0.259 #	0.046 #		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.744	1.62	3.86	0.703		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W140-09	W140-10	W140-11	W140-12	W140-13	W140-14
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018
			SDG Ref	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20
			Lab Sample No.(s)	17438052	17438102	17438117	17438127	17438136	17438061
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		99	86	106	104	102	98
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	0.455	1.23	1.39
Aliphatics >C16-C21	<0.1 mg/kg	TM173		11.7	2.89	5.99	6.02	11.1	5.49
Aliphatics >C21-C35	<0.1 mg/kg	TM173		116	24.2	66.5	62.9	94.9	28.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		30.4	10.2	31.3	24.2	34.9	6.67
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		158	37.3	104	93.6	142	42.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.39	<0.1	<0.1	0.294	1.32	0.992
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		10.7	1.06	4.4	2.83	6.87	4.87
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		61.4	11.2	32	26.8	47.6	29.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		26.5	6.05	19.5	111	21.5	14
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		10.2	2.23	7.82	53	8.13	5.16
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		99.9	18.3	55.9	140	77.4	49.3
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		257	55.6	160	234	219	91.3

Validated

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W140-15	W140-16	W140-09.5	W140-10.5	W140-11.5	W140-12.5
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018
			SDG Ref	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20
			Lab Sample No.(s)	17438071	17438083	17438094	17438109	17438121	17438131
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		96	97	90	92	105	104
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.53	<0.1	2.13	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		8.94	15.9	12.1	2.78	8.69	3.77
Aliphatics >C21-C35	<0.1 mg/kg	TM173		86.3	170	107	19.6	92.9	30.8
Aliphatics >C35-C44	<0.1 mg/kg	TM173		42	81.2	29.7	6.57	45.3	12.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		139	267	151	29	147	47.3
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.927	0.846	0.563	0.165	0.451	0.638
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		7.76	6.83	6.09	1.42	3.92	3.66
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		48.1	47.3	32	7.25	33.1	25.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		24.6	25.4	18.9	28.7	21.2	14.3
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		9.82	10.2	8.42	13.1	9.11	5.66
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		81.4	80.4	57.5	37.5	58.7	44.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		220	347	209	66.5	206	91.5

Validated

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W140-13.5	W140-14.5	W140-15.5	W140-16.5		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	24/04/2018	24/04/2018	24/04/2018	24/04/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	25/04/2018	25/04/2018	25/04/2018	25/04/2018		
			SDG Ref	180425-20	180425-20	180425-20	180425-20		
			Lab Sample No.(s)	17438056	17438066	17438078	17438087		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		81	92	87	86		
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.044	<0.176	<0.176	<0.176		
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.04	<0.04	<0.04		
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.04	<0.04	<0.04		
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.04	<0.04	<0.04		
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.04	<0.04	<0.04		
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	33.6	<0.1	0.736		
Aliphatics >C16-C21	<0.1 mg/kg	TM173		5.25	19.1	3.84	10.5		
Aliphatics >C21-C35	<0.1 mg/kg	TM173		43.1	11.3	37.3	109		
Aliphatics >C35-C44	<0.1 mg/kg	TM173		7.58	<0.1	15.6	49.4		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		55.9	64	56.7	170		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.04	<0.04	<0.04		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.04	<0.04	<0.04		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.04	<0.04	<0.04		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.04	<0.04	<0.04		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.05	0.281	0.97		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.94	3.32	2.51	5.3		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		24.3	19.8	21.8	38.7		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		8.86	6.92	101	22.4		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3	2.67	49.7	9.37		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		37.1	31.1	125	67.4		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		93	95.1	182	237		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W140-09	W140-10	W140-11	W140-12	W140-13	W140-14
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018
			SDG Ref	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20
			Lab Sample No.(s)	17438052	17438102	17438117	17438127	17438136	17438061
			AGS Reference						
Dibromofluoromethane**	%	TM116		97.9	96.6	104	101	104	94
Toluene-d8**	%	TM116		93.8	91.8	95.9	95.6	94	91.3
4-Bromofluorobenzene**	%	TM116		82.2	77	85.1	86.5	81.1	71.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.01 #	<0.01 #	<0.01 M	<0.01 #	<0.01 #	<0.01 M
Benzene	<0.009 mg/kg	TM116		<0.009 #	<0.009 #	<0.009 M	<0.009 #	<0.009 #	<0.009 M
Toluene	<0.007 mg/kg	TM116		<0.007 #	<0.007 #	<0.007 M	<0.007 #	<0.007 #	<0.007 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.004 #	<0.004 #	<0.004 M	<0.004 #	<0.004 #	<0.004 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #
o-Xylene	<0.01 mg/kg	TM116		<0.01 #	<0.01 #	<0.01 M	<0.01 #	<0.01 #	<0.01 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W140-15	W140-16	W140-09.5	W140-10.5	W140-11.5	W140-12.5
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018	25/04/2018
			SDG Ref	180425-20	180425-20	180425-20	180425-20	180425-20	180425-20
			Lab Sample No.(s)	17438071	17438083	17438094	17438109	17438121	17438131
			AGS Reference						
Dibromofluoromethane**	%	TM116		95.5	98.8	88	98.3	104	107
Toluene-d8**	%	TM116		90.4	93.7	95.9	92.7	95.6	96.7
4-Bromofluorobenzene**	%	TM116		72.3	80.9	84.3	75.2	85.9	81.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Benzene	<0.009 mg/kg	TM116		<0.009 #	<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M
Toluene	<0.007 mg/kg	TM116		<0.007 #	<0.007 M	<0.007 M	<0.007 M	<0.007 M	<0.007 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.004 #	<0.004 M	<0.004 M	<0.004 M	<0.004 M	<0.004 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #
o-Xylene	<0.01 mg/kg	TM116		<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			W140-13.5	0.00 - 0.00	Soil/Solid (S)	24/04/2018	00:00	25/04/2018	180425-20	17438056	
			W140-14.5	0.00 - 0.00	Soil/Solid (S)	24/04/2018	00:00	25/04/2018	180425-20	17438066	
			W140-15.5	0.00 - 0.00	Soil/Solid (S)	24/04/2018	00:00	25/04/2018	180425-20	17438078	
			W140-16.5	0.00 - 0.00	Soil/Solid (S)	24/04/2018	00:00	25/04/2018	180425-20	17438087	
Dibromofluoromethane**	%	TM116	98.8	112	103	101					
Toluene-d8**	%	TM116	93	98.3	95.7	91.1					
4-Bromofluorobenzene**	%	TM116	77.7	96.6	86.6	74.1					
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116	<0.01 M	<0.1 M	<0.01 #	<0.01 #					
Benzene	<0.009 mg/kg	TM116	<0.009 M	<0.09 M	<0.009 #	<0.009 #					
Toluene	<0.007 mg/kg	TM116	<0.007 M	<0.07 M	<0.007 #	<0.007 #					
Ethylbenzene	<0.004 mg/kg	TM116	<0.004 M	<0.04 M	<0.004 #	<0.004 #					
p/m-Xylene	<0.01 mg/kg	TM116	<0.01 #	<0.1 #	<0.01 #	<0.01 #					
o-Xylene	<0.01 mg/kg	TM116	<0.01 M	<0.1 M	<0.01 #	<0.01 #					

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W140-09 0.00 - 0.00 SOLID 24/04/2018 00:00:00 25/04/2018 14:05:43 180425-20 17438052 TM048	02/05/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W140-10 0.00 - 0.00 SOLID 24/04/2018 00:00:00 25/04/2018 13:34:32 180425-20 17438102 TM048	02/05/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W140-11 0.00 - 0.00 SOLID 24/04/2018 00:00:00 25/04/2018 15:15:47 180425-20 17438117 TM048	02/05/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W140-12 0.00 - 0.00 SOLID 24/04/2018 00:00:00 25/04/2018 15:18:04 180425-20 17438127 TM048	02/05/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W140-13 0.00 - 0.00 SOLID 24/04/2018 00:00:00 25/04/2018 14:08:02 180425-20 17438136 TM048	02/05/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W140-14 0.00 - 0.00 SOLID 24/04/2018 00:00:00 25/04/2018 14:34:32 180425-20 17438061 TM048	02/05/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**	**Report Number:** 455315
Location:	Llanwern	**Order Number:** LLA421	**Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W140-15 0.00 - 0.00 SOLID 24/04/2018 00:00:00 25/04/2018 13:40:20 180425-20 17438071 TM048	02/05/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W140-16 0.00 - 0.00 SOLID 24/04/2018 00:00:00 25/04/2018 13:37:11 180425-20 17438083 TM048	02/05/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.49
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.8
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438052
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-09
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000168	<0.00001	0.000168	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000103	<0.00001	0.00103	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000383	<0.000005	0.000383	<0.00005	-	-	-
Arsenic	0.000854	<0.0005	0.00854	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000204	<0.000005	0.000204	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000469	<0.000005	0.00469	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000318	<0.000005	0.000318	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000332	<0.000005	0.00332	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000317	<0.000005	0.000317	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000362	<0.000005	0.000362	<0.00005	-	-	-
Pyrene (diss.filt)	0.000368	<0.000005	0.00368	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000322	<0.000005	0.000322	<0.00005	-	-	-
Chromium	0.022	<0.001	0.22	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000359	<0.000002	0.0000359	<0.00002	-	-	-
Copper	0.00264	<0.0003	0.0264	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	11.02
Conductivity (µS/cm)	508.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

09/05/2018 10:54:07

10:53:41 09/05/2018

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.49
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.8
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438052
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-09
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00148	<0.000082	0.0148	<0.00082	-	-	-
Nickel	0.000402	<0.0004	0.00402	<0.004	-	-	-
Selenium	0.00193	<0.001	0.0193	<0.01	-	-	-
Vanadium	0.0929	<0.001	0.929	<0.01	-	-	-
Zinc	0.0015	<0.001	0.015	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	11.02
Conductivity (µS/cm)	508.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438056
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-13.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.342	<0.2	3.42	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000121	<0.00001	0.000121	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000096	<0.000005	0.000096	<0.00005	-	-	-
Arsenic	0.00339	<0.0005	0.0339	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000534	<0.000005	0.000534	<0.00005	-	-	-
Anthracene (diss.filt)	0.00000539	<0.000005	0.0000539	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.00000682	<0.000005	0.0000682	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000443	<0.000005	0.000443	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	0.00471	<0.003	0.0471	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.81
Conductivity (µS/cm)	455.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438056
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-13.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000144	<0.000082	0.00144	<0.00082	-	-	-
Nickel	0.000694	<0.0004	0.00694	<0.004	-	-	-
Selenium	0.00964	<0.001	0.0964	<0.01	-	-	-
Vanadium	0.0167	<0.001	0.167	<0.01	-	-	-
Zinc	0.00889	<0.001	0.0889	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.81
Conductivity (µS/cm)	455.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438061
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-14
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.898	<0.2	8.98	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000014	<0.00001	0.00014	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000564	<0.000005	0.0000564	<0.00005	-	-	-
Arsenic	0.0105	<0.0005	0.105	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000645	<0.000005	0.0000645	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000529	<0.000005	0.000529	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000097	<0.000005	0.000097	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000301	<0.000005	0.000301	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000413	<0.000005	0.000413	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000134	<0.000005	0.000134	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000608	<0.000005	0.0000608	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000701	<0.000002	0.0000701	<0.00002	-	-	-
Copper	0.00185	<0.0003	0.0185	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.00000948	<0.000005	0.0000948	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	0.00821	<0.003	0.0821	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	6.88
Conductivity (µS/cm)	358.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438061
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-14
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000234	<0.000082	0.00234	<0.00082	-	-	-
Nickel	0.00108	<0.0004	0.0108	<0.004	-	-	-
Selenium	0.00561	<0.001	0.0561	<0.01	-	-	-
Vanadium	0.00796	<0.001	0.0796	<0.01	-	-	-
Zinc	0.00698	<0.001	0.0698	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	6.88
Conductivity (µS/cm)	358.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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10:53:41 09/05/2018

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438066
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-14.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.658	<0.2	6.58	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000199	<0.00001	0.000199	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000549	<0.000005	0.0000549	<0.00005	-	-	-
Arsenic	0.011	<0.0005	0.11	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000757	<0.000005	0.0000757	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000532	<0.000005	0.000532	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000174	<0.000005	0.000174	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000279	<0.000005	0.000279	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000742	<0.000005	0.000742	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000032	<0.000005	0.00032	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000214	<0.000005	0.000214	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00415	<0.0003	0.0415	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Manganese	0.00734	<0.003	0.0734	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.04
Conductivity (µS/cm)	308.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438066
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-14.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000373	<0.000082	0.00373	<0.00082	-	-	-
Nickel	0.00189	<0.0004	0.0189	<0.004	-	-	-
Selenium	0.00511	<0.001	0.0511	<0.01	-	-	-
Vanadium	0.00602	<0.001	0.0602	<0.01	-	-	-
Zinc	0.00266	<0.001	0.0266	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	0.00103	<0.001	0.0103	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.04
Conductivity (µS/cm)	308.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438071
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-15
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.259	<0.2	2.59	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000517	<0.00001	0.000517	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000328	<0.000005	0.000328	<0.00005	-	-	-
Arsenic	0.00608	<0.0005	0.0608	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00023	<0.000005	0.0023	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000265	<0.000005	0.000265	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000993	<0.000005	0.000993	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000872	<0.000005	0.000872	<0.00005	-	-	-
Pyrene (diss.filt)	0.000168	<0.000005	0.00168	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000818	<0.000005	0.000818	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000113	<0.000005	0.00113	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000581	<0.000005	0.000581	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000717	<0.000002	0.000717	<0.00002	-	-	-
Copper	0.00431	<0.0003	0.0431	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000698	<0.000005	0.000698	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000476	<0.000005	0.000476	<0.00005	-	-	-
Manganese	0.00396	<0.003	0.0396	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.92
Conductivity (µS/cm)	476.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438071
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-15
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00118	<0.000082	0.0118	<0.00082	-	-	-
Nickel	0.000525	<0.0004	0.00525	<0.004	-	-	-
Selenium	0.00544	<0.001	0.0544	<0.01	-	-	-
Vanadium	0.0269	<0.001	0.269	<0.01	-	-	-
Zinc	0.00364	<0.001	0.0364	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.92
Conductivity (µS/cm)	476.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438078
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-15.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.218	<0.2	2.18	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000214	<0.00001	0.000214	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Arsenic	0.00268	<0.0005	0.0268	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000503	<0.000005	0.0000503	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000222	<0.000005	0.00222	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000161	<0.000005	0.000161	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000372	<0.000005	0.000372	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000164	<0.000005	0.000164	<0.00005	-	-	-
Pyrene (diss.filt)	0.000165	<0.000005	0.00165	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000495	<0.000002	0.0000495	<0.00002	-	-	-
Copper	0.00347	<0.0003	0.0347	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.00000601	<0.000005	0.0000601	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	9.23
Conductivity (µS/cm)	450.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438078
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-15.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000543	<0.000082	0.00543	<0.00082	-	-	-
Nickel	0.000762	<0.0004	0.00762	<0.004	-	-	-
Selenium	0.00619	<0.001	0.0619	<0.01	-	-	-
Vanadium	0.0217	<0.001	0.217	<0.01	-	-	-
Zinc	0.0011	<0.001	0.011	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	9.23
Conductivity (µS/cm)	450.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	0.685
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.3
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438083
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-16
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.231	<0.2	2.31	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000159	<0.00001	0.00159	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000249	<0.000005	0.000249	<0.00005	-	-	-
Arsenic	0.00422	<0.0005	0.0422	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000044	<0.000005	0.00044	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000334	<0.000005	0.00334	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000526	<0.000005	0.000526	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000344	<0.000005	0.00344	<0.00005	-	-	-
Cadmium	0.00026	<0.00008	0.0026	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000744	<0.000005	0.000744	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Pyrene (diss.filt)	0.000234	<0.000005	0.00234	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000014	<0.000005	0.00014	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00000578	<0.000005	0.0000578	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000273	<0.000002	0.0000273	<0.00002	-	-	-
Copper	0.0039	<0.0003	0.039	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000436	<0.0002	0.00436	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	0.00437	<0.003	0.0437	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	9.83
Conductivity (µS/cm)	333.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	0.685
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.3
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438083
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-16
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00131	<0.000082	0.0131	<0.00082	-	-	-
Nickel	0.00103	<0.0004	0.0103	<0.004	-	-	-
Selenium	0.00454	<0.001	0.0454	<0.01	-	-	-
Vanadium	0.0529	<0.001	0.529	<0.01	-	-	-
Zinc	0.00152	<0.001	0.0152	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.256	<0.019	2.56	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	9.83
Conductivity (µS/cm)	333.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438087
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-16.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.00017	<0.00001	0.0017	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Arsenic	0.00275	<0.0005	0.0275	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000163	<0.000005	0.000163	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000273	<0.000005	0.00273	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000324	<0.000005	0.000324	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000218	<0.000005	0.00218	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000451	<0.000005	0.000451	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000161	<0.000005	0.000161	<0.00005	-	-	-
Pyrene (diss.filt)	0.000213	<0.000005	0.00213	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00144	<0.0003	0.0144	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000945	<0.0002	0.00945	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	0.00842	<0.003	0.0842	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	9.76
Conductivity (µS/cm)	365.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438087
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-16.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00101	<0.000082	0.0101	<0.00082	-	-	-
Nickel	0.00049	<0.0004	0.0049	<0.004	-	-	-
Selenium	0.00374	<0.001	0.0374	<0.01	-	-	-
Vanadium	0.0492	<0.001	0.492	<0.01	-	-	-
Zinc	0.00814	<0.001	0.0814	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.381	<0.019	3.81	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	9.76
Conductivity (µS/cm)	365.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438094
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-09.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000136	<0.00001	0.000136	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000101	<0.00001	0.00101	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000293	<0.000005	0.000293	<0.00005	-	-	-
Arsenic	0.000994	<0.0005	0.00994	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000208	<0.000005	0.000208	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00032	<0.000005	0.0032	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000348	<0.000005	0.000348	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000296	<0.000005	0.00296	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000361	<0.000005	0.000361	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000278	<0.000005	0.000278	<0.00005	-	-	-
Pyrene (diss.filt)	0.00027	<0.000005	0.0027	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000249	<0.000005	0.000249	<0.00005	-	-	-
Chromium	0.0207	<0.001	0.207	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00000875	<0.000005	0.0000875	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000318	<0.000002	0.0000318	<0.00002	-	-	-
Copper	0.00715	<0.0003	0.0715	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	11.62
Conductivity (µS/cm)	1,140.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438094
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-09.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00117	<0.000082	0.0117	<0.00082	-	-	-
Nickel	0.00066	<0.0004	0.0066	<0.004	-	-	-
Selenium	0.0012	<0.001	0.012	<0.01	-	-	-
Vanadium	0.018	<0.001	0.18	<0.01	-	-	-
Zinc	0.00169	<0.001	0.0169	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	11.62
Conductivity (µS/cm)	1,140.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438102
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-10
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.22	<0.2	2.2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000108	<0.00001	0.00108	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000294	<0.000005	0.000294	<0.00005	-	-	-
Arsenic	0.00457	<0.0005	0.0457	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000341	<0.000005	0.000341	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000274	<0.000005	0.00274	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000429	<0.000005	0.000429	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000182	<0.000005	0.00182	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000697	<0.000005	0.000697	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000164	<0.000005	0.000164	<0.00005	-	-	-
Pyrene (diss.filt)	0.000193	<0.000005	0.00193	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000163	<0.000005	0.000163	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00000785	<0.000005	0.0000785	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000383	<0.000002	0.0000383	<0.00002	-	-	-
Copper	0.00342	<0.0003	0.0342	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000347	<0.0002	0.00347	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	0.00327	<0.003	0.0327	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	9.36
Conductivity (µS/cm)	311.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438102
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-10
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000978	<0.000082	0.00978	<0.00082	-	-	-
Nickel	0.000996	<0.0004	0.00996	<0.004	-	-	-
Selenium	0.00428	<0.001	0.0428	<0.01	-	-	-
Vanadium	0.0393	<0.001	0.393	<0.01	-	-	-
Zinc	0.00146	<0.001	0.0146	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.634	<0.019	6.34	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	9.36
Conductivity (µS/cm)	311.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438109
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-10.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.399	<0.2	3.99	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000682	<0.00001	0.000682	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000225	<0.000005	0.00225	<0.00005	-	-	-
Arsenic	0.00773	<0.0005	0.0773	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000045	<0.000005	0.00045	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000332	<0.000005	0.00332	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000571	<0.000005	0.000571	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000214	<0.000005	0.00214	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000132	<0.000005	0.00132	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000219	<0.000005	0.000219	<0.00005	-	-	-
Pyrene (diss.filt)	0.000267	<0.000005	0.00267	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000174	<0.000005	0.000174	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000683	<0.000005	0.0000683	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000613	<0.000002	0.0000613	<0.00002	-	-	-
Copper	0.00269	<0.0003	0.0269	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.00000698	<0.000005	0.0000698	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	9.02
Conductivity (µS/cm)	351.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438109
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-10.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00141	<0.000082	0.0141	<0.00082	-	-	-
Nickel	0.00088	<0.0004	0.0088	<0.004	-	-	-
Selenium	0.00503	<0.001	0.0503	<0.01	-	-	-
Vanadium	0.039	<0.001	0.39	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	9.02
Conductivity (µS/cm)	351.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438117
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-11
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000734	<0.00001	0.000734	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Arsenic	0.0022	<0.0005	0.022	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000714	<0.000005	0.0000714	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000319	<0.000005	0.00319	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000132	<0.000005	0.00132	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000175	<0.000005	0.000175	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
Pyrene (diss.filt)	0.000214	<0.000005	0.00214	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000206	<0.000005	0.000206	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00000643	<0.000005	0.0000643	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000253	<0.000002	0.0000253	<0.00002	-	-	-
Copper	0.00207	<0.0003	0.0207	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	9.88
Conductivity (µS/cm)	382.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438117
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-11
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000851	<0.000082	0.00851	<0.00082	-	-	-
Nickel	0.000566	<0.0004	0.00566	<0.004	-	-	-
Selenium	0.00551	<0.001	0.0551	<0.01	-	-	-
Vanadium	0.0167	<0.001	0.167	<0.01	-	-	-
Zinc	0.0022	<0.001	0.022	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	9.88
Conductivity (µS/cm)	382.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.7
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438121
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-11.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000552	<0.00001	0.000552	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Arsenic	0.00195	<0.0005	0.0195	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000136	<0.000005	0.000136	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000267	<0.000005	0.00267	<0.00005	-	-	-
Anthracene (diss.filt)	0.000027	<0.000005	0.00027	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.00003	<0.000005	0.0003	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Pyrene (diss.filt)	0.000174	<0.000005	0.00174	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00299	<0.0003	0.0299	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.16
Conductivity (µS/cm)	509.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.7
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438121
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-11.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000751	<0.000082	0.00751	<0.00082	-	-	-
Nickel	0.000643	<0.0004	0.00643	<0.004	-	-	-
Selenium	0.00655	<0.001	0.0655	<0.01	-	-	-
Vanadium	0.00825	<0.001	0.0825	<0.01	-	-	-
Zinc	0.00107	<0.001	0.0107	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.16
Conductivity (µS/cm)	509.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

09/05/2018 10:54:07

10:53:41 09/05/2018

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.61
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.8
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438127
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-12
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.013	<0.01	0.13	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.35	<0.2	3.5	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000343	<0.00001	0.000343	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000175	<0.000005	0.000175	<0.00005	-	-	-
Arsenic	0.00267	<0.0005	0.0267	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000204	<0.000005	0.000204	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000088	<0.000005	0.00088	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000427	<0.000005	0.000427	<0.00005	-	-	-
Chrysene (diss.filt)	0.00000725	<0.000005	0.0000725	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000743	<0.000005	0.000743	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000204	<0.000002	0.0000204	<0.00002	-	-	-
Copper	0.00646	<0.0003	0.0646	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.38
Conductivity (µS/cm)	464.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.61
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.8
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438127
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-12
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000419	<0.000082	0.00419	<0.00082	-	-	-
Nickel	0.000852	<0.0004	0.00852	<0.004	-	-	-
Selenium	0.00649	<0.001	0.0649	<0.01	-	-	-
Vanadium	0.00518	<0.001	0.0518	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.38
Conductivity (µS/cm)	464.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.14
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438131
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-12.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.287	<0.2	2.87	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000427	<0.00001	0.000427	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Arsenic	0.0025	<0.0005	0.025	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000806	<0.000005	0.000806	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000132	<0.000005	0.000132	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.00006	<0.000005	0.0006	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000594	<0.000005	0.000594	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.00000643	<0.000005	0.0000643	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00363	<0.0003	0.0363	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.59
Conductivity (µS/cm)	443.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.14
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438131
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-12.5
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000296	<0.000082	0.00296	<0.00082	-	-	-
Nickel	0.001	<0.0004	0.01	<0.004	-	-	-
Selenium	0.00682	<0.001	0.0682	<0.01	-	-	-
Vanadium	0.00685	<0.001	0.0685	<0.01	-	-	-
Zinc	0.00105	<0.001	0.0105	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.59
Conductivity (µS/cm)	443.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438136
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-13
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.541	<0.2	5.41	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000311	<0.00001	0.000311	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000154	<0.000005	0.000154	<0.00005	-	-	-
Arsenic	0.00526	<0.0005	0.0526	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000786	<0.000005	0.0000786	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000223	<0.000005	0.00223	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000228	<0.000005	0.000228	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000513	<0.000005	0.000513	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000024	<0.000005	0.00024	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000195	<0.000005	0.000195	<0.00005	-	-	-
Pyrene (diss.filt)	0.000169	<0.000005	0.00169	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000143	<0.000005	0.000143	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000084	<0.000005	0.000084	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000439	<0.000002	0.0000439	<0.00002	-	-	-
Copper	0.00357	<0.0003	0.0357	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	9.31
Conductivity (µS/cm)	305.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	180425-20
Lab Sample Number(s)	17438136
Sampled Date	24-Apr-2018
Customer Sample Ref.	W140-13
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00059	<0.000082	0.0059	<0.00082	-	-	-
Nickel	0.000894	<0.0004	0.00894	<0.004	-	-	-
Selenium	0.00539	<0.001	0.0539	<0.01	-	-	-
Vanadium	0.0348	<0.001	0.348	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	9.31
Conductivity (µS/cm)	305.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

09/05/2018 10:54:07

10:53:41 09/05/2018

Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180425-20	**Client Reference:**		**Report Number:**	455315
Location:	Llanwern	**Order Number:**	LLA421	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	17438052	17438102	17438117	17438127	17438136	17438061	17438071	17438083	17438094	17438109
Customer Sample Ref.	W140-09	W140-10	W140-11	W140-12	W140-13	W140-14	W140-15	W140-16	W140-09.5	W140-10.5
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	03-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	03-May-2018	02-May-2018	02-May-2018		
Ammoniacal Nitrogen	04-May-2018	04-May-2018	05-May-2018	05-May-2018	04-May-2018	05-May-2018	04-May-2018	04-May-2018	05-May-2018	04-May-2018
Ammonium Soil by Titration	04-May-2018	04-May-2018	04-May-2018	04-May-2018	04-May-2018	04-May-2018	04-May-2018	04-May-2018	04-May-2018	04-May-2018
Anions by Kone (soil)	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018		
Asbestos ID in Solid Samples	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018		
CEN 10:1 Leachate (1 Stage)	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018
CEN Readings	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Cyanide Comp/Free/Total/Thiocyanate	04-May-2018	03-May-2018	03-May-2018	04-May-2018	03-May-2018	03-May-2018	04-May-2018	03-May-2018	03-May-2018	03-May-2018
Dissolved Metals by ICP-MS	09-May-2018	09-May-2018	09-May-2018	09-May-2018	09-May-2018	09-May-2018	09-May-2018	09-May-2018	09-May-2018	09-May-2018
EPH CWG (Aliphatic) Filtered GC (W)	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	03-May-2018	02-May-2018	02-May-2018	02-May-2018
EPH CWG (Aliphatic) GC (S)	03-May-2018	04-May-2018	04-May-2018	04-May-2018	03-May-2018	04-May-2018	04-May-2018	04-May-2018	02-May-2018	04-May-2018
EPH CWG (Aromatic) Filtered GC (W)	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	03-May-2018	02-May-2018	02-May-2018	02-May-2018
EPH CWG (Aromatic) GC (S)	03-May-2018	04-May-2018	04-May-2018	04-May-2018	03-May-2018	04-May-2018	04-May-2018	04-May-2018	02-May-2018	04-May-2018
GRO by GC-FID (S)	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018
GRO by GC-FID (W)	04-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	04-May-2018
Mercury Dissolved	04-May-2018	04-May-2018	03-May-2018	03-May-2018	04-May-2018	04-May-2018	03-May-2018	04-May-2018	04-May-2018	04-May-2018
Metals in solid samples by OES	03-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	03-May-2018	01-May-2018	01-May-2018	03-May-2018	01-May-2018
PAH by GCMS	04-May-2018	04-May-2018	04-May-2018	08-May-2018	04-May-2018	04-May-2018	03-May-2018	04-May-2018	04-May-2018	04-May-2018
PAH in waters by GC-MS (diss.filt)	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018
pH	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
pH Value of Filtered Water	01-May-2018	28-Apr-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	28-Apr-2018	28-Apr-2018	01-May-2018	01-May-2018
Phenols by HPLC (S)	02-May-2018	02-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	02-May-2018	02-May-2018	02-May-2018
Sample description	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018
Total Organic Carbon	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Total Sulphate	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018		
Total Sulphur	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018		
TPH CWG Filtered (W)	04-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	04-May-2018
TPH CWG GC (S)	03-May-2018	04-May-2018	04-May-2018	04-May-2018	03-May-2018	04-May-2018	04-May-2018	04-May-2018	03-May-2018	04-May-2018
VOC MS (S)	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018
VOC MS (W)	03-May-2018	02-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	02-May-2018	02-May-2018	03-May-2018	03-May-2018

Lab Sample No(s)	17438121	17438131	17438056	17438066	17438078	17438087
Customer Sample Ref.	W140-11.5	W140-12.5	W140-13.5	W140-14.5	W140-15.5	W140-16.5
AGS Ref.						
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammoniacal Nitrogen	05-May-2018	04-May-2018	05-May-2018	05-May-2018	05-May-2018	04-May-2018
Ammonium Soil by Titration	04-May-2018	04-May-2018	04-May-2018	04-May-2018	04-May-2018	04-May-2018
CEN 10:1 Leachate (1 Stage)	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018
CEN Readings	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Cyanide Comp/Free/Total/Thiocyanate	04-May-2018	04-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018
Dissolved Metals by ICP-MS	09-May-2018	09-May-2018	09-May-2018	09-May-2018	09-May-2018	09-May-2018
EPH CWG (Aliphatic) Filtered GC (W)	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
EPH CWG (Aliphatic) GC (S)	04-May-2018	04-May-2018	03-May-2018	04-May-2018	04-May-2018	04-May-2018
EPH CWG (Aromatic) Filtered GC (W)	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
EPH CWG (Aromatic) GC (S)	04-May-2018	04-May-2018	03-May-2018	04-May-2018	04-May-2018	04-May-2018
GRO by GC-FID (S)	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018
GRO by GC-FID (W)	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018
Mercury Dissolved	03-May-2018	04-May-2018	03-May-2018	03-May-2018	03-May-2018	04-May-2018
Metals in solid samples by OES	01-May-2018	03-May-2018	02-May-2018	02-May-2018	03-May-2018	01-May-2018
PAH by GCMS	04-May-2018	03-May-2018	04-May-2018	09-May-2018	03-May-2018	04-May-2018
PAH in waters by GC-MS (diss.filt)	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018
pH	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
pH Value of Filtered Water	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	28-Apr-2018
Phenols by HPLC (S)	03-May-2018	03-May-2018	02-May-2018	03-May-2018	03-May-2018	03-May-2018
Sample description	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018
Total Organic Carbon	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
TPH CWG Filtered (W)	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018
TPH CWG GC (S)	04-May-2018	04-May-2018	03-May-2018	04-May-2018	04-May-2018	04-May-2018
VOC MS (S)	03-May-2018	03-May-2018	03-May-2018	04-May-2018	03-May-2018	03-May-2018
VOC MS (W)	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	02-May-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Hawarden
Deeside
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Tel: (01244) 528700
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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	14 June 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180504-98
Your Reference:	
Location:	Llanwern
Report No:	460210

This report has been revised and directly supersedes 460105 in its entirety.

We received 21 samples on Friday May 04, 2018 and 20 of these samples were scheduled for analysis which was completed on Thursday June 14, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17502343	NO ID			
17502252	TP3BC4-01		0.50 - 0.50	02/05/2018
17502310	TP3BC4-02		1.00 - 1.00	02/05/2018
17502314	TP3BC4-03		2.00 - 2.00	02/05/2018
17502318	TP3BC4-04		3.00 - 3.00	02/05/2018
17502322	TP3BC4-V		3.40 - 3.40	02/05/2018
17502306	TP3BC6-V		3.20 - 3.20	02/05/2018
17502326	TP3BD4-01		0.50 - 0.50	02/05/2018
17502331	TP3BD4-02		1.00 - 1.00	02/05/2018
17502335	TP3BD4-03		2.00 - 2.00	02/05/2018
17502339	TP3BD4-04		3.00 - 3.00	02/05/2018
17502258	TP3BD4-V		3.40 - 3.40	02/05/2018
17501927	TP3BD6-V		3.20 - 3.20	02/05/2018
17502263	TP3BE4-01		0.50 - 0.50	02/05/2018
17502270	TP3BE4-02		1.00 - 1.00	02/05/2018
17502276	TP3BE4-03		2.00 - 2.00	02/05/2018
17502280	TP3BE4-04		3.00 - 3.00	02/05/2018
17502293	TP3BE5-01		1.00 - 1.00	02/05/2018
17502297	TP3BE5-02		2.00 - 2.00	02/05/2018
17502286	TP3BE4-V		4.00 - 4.00	02/05/2018
17502301	TP3BE5-V		2.50 - 2.50	02/05/2018

Maximum Sample/Coolbox Temperature (°C) :

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

12.2
ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17502252			17502310			17502314			17502318			17502322			17502306			17502326
Customer Sample Reference			TP3BC4-01			TP3BC4-02			TP3BC4-03			TP3BC4-04			TP3BC4-V			TP3BC6-V			TP3BD4-01
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			3.00 - 3.00			3.40 - 3.40			3.20 - 3.20			0.50 - 0.50
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 7		X						X										X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 14	X			X			X			X							X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 7		X						X										X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 7	X						X										X		
CEN Readings	All	NDPs: 0 Tests: 14	X			X			X			X							X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 32	X	X		X	X		X	X		X	X		X		X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 14	X			X			X			X							X		
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 14	X			X			X			X							X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 14	X			X			X			X							X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 20			X			X			X			X		X		X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 14	X			X			X			X							X		
Mercury Dissolved	All	NDPs: 0 Tests: 14	X			X			X			X							X		

17502276	TP3BE4-03		2.00 - 2.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
17502270	TP3BE4-02		1.00 - 1.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X						
				1kg TUB	S		X				X	X	X	X		X				X		X	X
17502263	TP3BE4-01		0.50 - 0.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
17501927	TP3BD6-V		3.20 - 3.20	400g Tub (ALE214)	S			X				X			X		X			X	X		
17502258	TP3BD4-V		3.40 - 3.40	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X						
17502339	TP3BD4-04		3.00 - 3.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X						
				1kg TUB	S		X				X	X	X	X		X				X		X	X
17502335	TP3BD4-03		2.00 - 2.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
17502331	TP3BD4-02		1.00 - 1.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X						
				1kg TUB	S		X				X	X	X	X		X				X		X	X

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																			
			17502252			17502310			17502314			17502318			17502322			17502306			17502326	
			Customer Sample Reference																			
			TP3BC4-01			TP3BC4-02			TP3BC4-03			TP3BC4-04			TP3BC4-V			TP3BC6-V			TP3BD4-01	
			AGS Reference																			
			Depth (m)																			
			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			3.00 - 3.00			3.40 - 3.40			3.20 - 3.20			0.50 - 0.50	
			Container																			
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type																			
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
PAH by GCMS	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 14	X			X			X			X							X			
pH	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 14	X			X			X			X							X			
Phenols by HPLC (S)	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
Sample description	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
Total Sulphate	All	NDPs: 0 Tests: 7		X						X											X	
Total Sulphur	All	NDPs: 0 Tests: 7		X						X											X	
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 14	X			X			X			X							X			
TPH CWG GC (S)	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
VOC MS (S)	All	NDPs: 0 Tests: 20			X			X			X			X		X		X			X	
VOC MS (W)	All	NDPs: 0 Tests: 14	X			X			X			X							X			

17502276	TP3BE4-03		2.00 - 2.00	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X					
				1kg TUB	S			X		X							X				X	
17502270	TP3BE4-02		1.00 - 1.00	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X					X				
				1kg TUB	S			X		X							X				X	
17502263	TP3BE4-01		0.50 - 0.50	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X					
				1kg TUB	S			X		X							X				X	
17501927	TP3BD6-V		3.20 - 3.20	400g Tub (ALE214)	S	X	X		X		X	X	X				X		X			
17502258	TP3BD4-V		3.40 - 3.40	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X					
17502339	TP3BD4-04		3.00 - 3.00	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X					
				1kg TUB	S			X		X							X				X	
17502335	TP3BD4-03		2.00 - 2.00	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X					
				1kg TUB	S			X		X							X				X	
17502331	TP3BD4-02		1.00 - 1.00	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X					
				1kg TUB	S			X		X							X				X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17502280			17502293		17502297		17502286		17502301
Customer Sample Reference			TP3BE4-04			TP3BE5-01		TP3BE5-02		TP3BE4-V		TP3BE5-V
AGS Reference												
Depth (m)			3.00 - 3.00			1.00 - 1.00		2.00 - 2.00		4.00 - 4.00		2.50 - 2.50
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	400g Tub (ALE214)	60g VOC (ALE215)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 7				X							
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 14	X			X		X					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 20		X		X		X		X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 7				X							
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 7				X							
CEN Readings	All	NDPs: 0 Tests: 14	X			X		X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 32	X	X		X		X		X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 14	X			X		X					
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 14	X			X		X					
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 20		X		X		X		X		X	
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 14	X			X		X					
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 20		X		X		X		X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 20			X		X		X		X		X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 14	X			X		X					
Mercury Dissolved	All	NDPs: 0 Tests: 14	X			X		X					

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17502280		17502293		17502297		17502286		17502301	
Customer Sample Reference			TP3BE4-04		TP3BE5-01		TP3BE5-02		TP3BE4-V		TP3BE5-V	
AGS Reference												
Depth (m)			3.00 - 3.00		1.00 - 1.00		2.00 - 2.00		4.00 - 4.00		2.50 - 2.50	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	400g Tub (ALE214)	60g VOC (ALE215)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 20		X		X		X		X		X	
PAH by GCMS	All	NDPs: 0 Tests: 20		X		X		X		X		X	
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 14	X			X		X					
pH	All	NDPs: 0 Tests: 20		X		X		X		X		X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 14	X			X		X					
Phenols by HPLC (S)	All	NDPs: 0 Tests: 20		X		X		X		X		X	
Sample description	All	NDPs: 0 Tests: 20		X		X		X		X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 20		X		X		X		X		X	
Total Sulphate	All	NDPs: 0 Tests: 7				X							
Total Sulphur	All	NDPs: 0 Tests: 7				X							
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 14	X			X		X					
TPH CWG GC (S)	All	NDPs: 0 Tests: 20		X		X		X		X		X	
VOC MS (S)	All	NDPs: 0 Tests: 20			X		X		X		X		X
VOC MS (W)	All	NDPs: 0 Tests: 14	X			X		X					

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17502252	TP3BC4-01	0.50 - 0.50	Dark Brown	Sand	Crushed Brick	Stones
17502310	TP3BC4-02	1.00 - 1.00	Dark Brown	Sandy Clay	Stones	None
17502314	TP3BC4-03	2.00 - 2.00	Dark Brown	Sand	Vegetation	Stones
17502318	TP3BC4-04	3.00 - 3.00	Dark Brown	Stone/Soil	Stones	None
17502322	TP3BC4-V	3.40 - 3.40	Dark Brown	Clay	None	None
17502306	TP3BC6-V	3.20 - 3.20	Dark Brown	Sandy Clay	Vegetation	Stones
17502326	TP3BD4-01	0.50 - 0.50	Dark Brown	Sand	Stones	None
17502331	TP3BD4-02	1.00 - 1.00	Dark Brown	Sandy Clay	Stones	None
17502335	TP3BD4-03	2.00 - 2.00	Dark Brown	Sandy Clay	Stones	None
17502339	TP3BD4-04	3.00 - 3.00	Dark Brown	Sand	Crushed Brick	None
17502258	TP3BD4-V	3.40 - 3.40	Grey	Clay	None	None
17501927	TP3BD6-V	3.20 - 3.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
17502263	TP3BE4-01	0.50 - 0.50	Dark Brown	Sandy Clay Loam	Stones	Vegetation
17502270	TP3BE4-02	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
17502276	TP3BE4-03	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Vegetation
17502280	TP3BE4-04	3.00 - 3.00	Dark Brown	Sandy Clay Loam	Stones	None
17502293	TP3BE5-01	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Brick
17502297	TP3BE5-02	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Brick
17502286	TP3BE4-V	4.00 - 4.00	Dark Brown	Clay	Stones	Vegetation
17502301	TP3BE5-V	2.50 - 2.50	Dark Brown	Sandy Clay	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BC4-01	TP3BC4-02	TP3BC4-03	TP3BC4-04	TP3BC4-V	TP3BC6-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	3.40 - 3.40	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018
			SDG Ref	180504-98	180504-98	180504-98	180504-98	180504-98	180504-98
			Lab Sample No.(s)	17502252	17502310	17502314	17502318	17502322	17502306
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5.5	7.5	6.2	7	27	32
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 #	228 M	385 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0108 M	0.0107 M	0.0108 #	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0107 M	<0.01 #	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.885		1.03			
Sulphate, Total potential	<0.06 %	TM132		2.66		3.09			
Soil Organic Matter (SOM)	<0.35 %	TM132		4.45 #	7.83 #	3.15 #	8.72 #	3.65 #	7.55 #
pH	1 pH Units	TM133		9.62 M	10.2 M	10.1 M	8.33 #	7.78 M	7.97 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.07 M	<1 M	1.08 #	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.57 M	5.74 M	5.27 M	4.37 #	11 M	18.1 M
Cadmium	<0.02 mg/kg	TM181		0.0732 M	0.706 M	0.156 M	0.431 #	0.471 M	0.915 M
Chromium	<0.9 mg/kg	TM181		30.5 M	47 M	18.5 M	50.5 #	32.5 M	29.9 M
Copper	<1.4 mg/kg	TM181		<1.4 M	9.19 M	2.18 M	<1.4 #	13.9 M	19.4 M
Iron	<1000 mg/kg	TM181		32400 #	53600 #	24200 #	69800 #	32100 #	26700 #
Lead	<0.7 mg/kg	TM181		6.73 M	31.6 M	17.6 M	1.59 #	28.9 M	59.2 M
Manganese	<0.13 mg/kg	TM181		7430 M	693 M	4840 M	9170 #	208 M	427 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 #	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		3.76 M	7.42 M	4.95 M	5.57 #	25.8 M	31 M
Selenium	<1 mg/kg	TM181		6.44 #	3.64 #	4.57 #	4.14 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		112 #	92.6 #	46.5 #	265 #	51.3 #	54.6 #
Zinc	<1.9 mg/kg	TM181		43.8 M	166 M	70.4 M	41.1 #	108 M	207 M
Sulphate, acid soluble (total)	<0.02 %	TM221		2.35		2.85			
Calcium	<21 mg/kg	TM224		218000		168000			
Magnesium	<8 mg/kg	TM224		32700		26700			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.627 M		0.908 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BD4-01	TP3BD4-02	TP3BD4-03	TP3BD4-04	TP3BD4-V	TP3BD6-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	3.40 - 3.40	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018
			SDG Ref	180504-98	180504-98	180504-98	180504-98	180504-98	180504-98
			Lab Sample No.(s)	17502326	17502331	17502335	17502339	17502258	17501927
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.8	10	9.6	9.4	26	25
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	163 M	282 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.167		0.172			
Sulphate, Total potential	<0.06 %	TM132		0.501		0.516			
Soil Organic Matter (SOM)	<0.35 %	TM132		4.57 #	7.98 #	7.48 #	9.79 #	2.71 #	4.47 #
pH	1 pH Units	TM133		10.7 M	9.57 M	10.6 M	10.3 M	7.62 M	7.07 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		24 M	13.6 M	31.4 M	10.5 M	12.9 M	13.5 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.2 M	3.97 M	0.589 M	0.568 M
Chromium	<0.9 mg/kg	TM181		<9 M	<9 M	<9 M	<0.9 M	31.1 M	43.9 M
Copper	<1.4 mg/kg	TM181		32 M	16.3 M	39.9 M	23 M	13.2 M	16.2 M
Iron	<1000 mg/kg	TM181		343000 #	240000 #	328000 #	374000 #	43700 #	30700 #
Lead	<0.7 mg/kg	TM181		167 M	79.2 M	112 M	84.7 M	42.6 M	32.3 M
Manganese	<0.13 mg/kg	TM181		5610 M	6490 M	4900 M	5950 M	695 M	273 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		43.1 M	26.9 M	46.2 M	22.8 M	32.4 M	28.7 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		128 #	106 #	146 #	106 #	54.7 #	56.3 #
Zinc	<1.9 mg/kg	TM181		675 M	269 M	383 M	405 M	150 M	199 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.224		0.279			
Calcium	<21 mg/kg	TM224		46300		56300			
Magnesium	<8 mg/kg	TM224		7010		8780			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.239 M		0.216 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BE4-01	TP3BE4-02	TP3BE4-03	TP3BE4-04	TP3BE5-01	TP3BE5-02
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018
			SDG Ref	180504-98	180504-98	180504-98	180504-98	180504-98	180504-98
			Lab Sample No.(s)	17502263	17502270	17502276	17502280	17502293	17502297
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	9.1	18	23	9	6.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	29.6 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0439 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.011 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.033 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.0549 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.156		0.13		0.294	
Sulphate, Total potential	<0.06 %	TM132		0.468		0.39		0.882	
Soil Organic Matter (SOM)	<0.35 %	TM132		5.67 #	2.91 #	10.2 #	9.98 #	5.05 #	4.38 #
pH	1 pH Units	TM133		10.3 M	8.51 M	8.89 M	11.1 M	10.9 M	11.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	4.03 M	1.73 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		15.1 M	5.41 M	20.1 M	30.4 M	13.3 M	9.5 M
Cadmium	<0.02 mg/kg	TM181		2.08 M	4 M	2.45 M	3.76 M	0.328 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		<0.9 M	<0.9 M	<9 M	<9 M	138 M	223 M
Copper	<1.4 mg/kg	TM181		21 M	19.2 M	23.3 M	164 M	20 M	9.01 M
Iron	<1000 mg/kg	TM181		223000 #	413000 #	316000 #	350000 #	103000 #	166000 #
Lead	<0.7 mg/kg	TM181		46.3 M	89.5 M	1050 M	1880 M	101 M	28 M
Manganese	<0.13 mg/kg	TM181		4480 M	5520 M	7350 M	8530 M	9990 M	22500 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	0.166 M	<1.4 M	1.55 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		20.2 M	21.5 M	29.4 M	31.9 M	23.5 M	9.98 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<10 #	<10 #	<10 #	7.9 #
Vanadium	<0.2 mg/kg	TM181		84.2 #	31.4 #	105 #	105 #	228 #	352 #
Zinc	<1.9 mg/kg	TM181		199 M	306 M	2340 M	4290 M	340 M	90.3 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.209		0.117		0.565	
Calcium	<21 mg/kg	TM224		65300		49500		146000	
Magnesium	<8 mg/kg	TM224		7700		5240		9240	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.206 M		0.224 M		0.548 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	TP3BE4-V	TP3BE5-V				
Depth (m)	4.00 - 4.00	2.50 - 2.50				
Sample Type	Soil/Solid (S)	Soil/Solid (S)				
Date Sampled	02/05/2018	02/05/2018				
Sample Time	00:00	00:00				
Date Received	04/05/2018	04/05/2018				
SDG Ref	180504-98	180504-98				
Lab Sample No.(s)	17502286	17502301				
AGS Reference						

Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	30	37				
Exchangeable Ammonia as N	<12 mg/kg	TM024	246 M	321 M				
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M				
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M				
Soil Organic Matter (SOM)	<0.35 %	TM132	4 #	8.36 #				
pH	1 pH Units	TM133	7.82 M	7.23 M				
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M				
Arsenic	<0.6 mg/kg	TM181	13.3 M	22.4 M				
Cadmium	<0.02 mg/kg	TM181	0.245 M	0.93 M				
Chromium	<0.9 mg/kg	TM181	36.5 M	54.2 M				
Copper	<1.4 mg/kg	TM181	15.8 M	21.7 M				
Iron	<1000 mg/kg	TM181	37600 #	48800 #				
Lead	<0.7 mg/kg	TM181	49 M	53 M				
Manganese	<0.13 mg/kg	TM181	257 M	289 M				
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14 M				
Nickel	<0.2 mg/kg	TM181	30.8 M	33 M				
Selenium	<1 mg/kg	TM181	<1 #	<1 #				
Vanadium	<0.2 mg/kg	TM181	57.1 #	106 #				
Zinc	<1.9 mg/kg	TM181	149 M	170 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BC4-01	TP3BC4-02	TP3BC4-03	TP3BC4-04	TP3BC4-V	TP3BC6-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	3.40 - 3.40	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018
			SDG Ref	180504-98	180504-98	180504-98	180504-98	180504-98	180504-98
			Lab Sample No.(s)	17502252	17502310	17502314	17502318	17502322	17502306
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.4	91.9	87.4	91	90.8	92
Acenaphthene-d10 % recovery**	%	TM218		101	92.4	98.5	90.3	88.9	99.7
Phenanthrene-d10 % recovery**	%	TM218		98.6	89.2	104	88	86.7	96.3
Chrysene-d12 % recovery**	%	TM218		101	90.1	109	86.6	76.1	113
Perylene-d12 % recovery**	%	TM218		98.6	89.1	96.2	83	75.2	116
Naphthalene	<0.009 mg/kg	TM218		5.6 M	4.47 M	2.62 M	2.37 #	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		1.88 M	1.72 M	0.605 M	0.404 #	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.198 M	0.151 M	0.0698 M	0.0485 #	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		1.05 M	0.933 M	0.313 M	0.19 #	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		6.34 M	5.48 M	1.78 M	1.08 #	<0.015 M	0.0598 M
Anthracene	<0.016 mg/kg	TM218		1.64 M	2.21 M	0.519 M	0.349 #	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		9.63 M	11.2 M	2.76 M	1.41 #	<0.017 M	0.112 M
Pyrene	<0.015 mg/kg	TM218		7.12 M	8.26 M	2.1 M	1.11 #	<0.015 M	0.0872 M
Benz(a)anthracene	<0.014 mg/kg	TM218		4.81 M	5.18 M	1.54 M	0.762 #	<0.014 M	0.0549 M
Chrysene	<0.01 mg/kg	TM218		4.89 M	4.16 M	1.55 M	0.601 #	<0.01 M	0.0753 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		8.03 M	7.92 M	2.53 M	1.61 #	<0.015 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		3.23 M	2.77 M	0.855 M	0.479 #	<0.014 M	0.0376 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		4.95 M	5.12 M	1.57 M	0.867 #	<0.015 M	0.0536 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		4.44 M	3.66 M	1.4 M	0.897 #	<0.018 M	0.0438 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.963 M	1.1 M	0.304 M	0.239 #	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		4.21 M	4.2 M	1.3 M	1.07 #	<0.024 M	0.0423 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		69	68.5	21.8	13.5	<0.118	0.566

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BD4-01	TP3BD4-02	TP3BD4-03	TP3BD4-04	TP3BD4-V	TP3BD6-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	3.40 - 3.40	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018
			SDG Ref	180504-98	180504-98	180504-98	180504-98	180504-98	180504-98
			Lab Sample No.(s)	17502326	17502331	17502335	17502339	17502258	17501927
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.8	93.4	93.3	90.4	76.4	83.9
Acenaphthene-d10 % recovery**	%	TM218		88.6	94.9	92.4	89.3	83.5	85.3
Phenanthrene-d10 % recovery**	%	TM218		85.8	93.2	89.3	86.3	90.9	89.2
Chrysene-d12 % recovery**	%	TM218		79.7	88.6	86	79.4	105	92.1
Perylene-d12 % recovery**	%	TM218		76.8	83.5	84.5	77.7	93.2	88.9
Naphthalene	<0.009 mg/kg	TM218		0.406 M	0.926 M	0.934 M	0.668 M	0.0149 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.16 M	0.371 M	0.333 M	0.238 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0172 M	0.0536 M	0.0428 M	0.0307 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.145 M	0.294 M	0.256 M	0.159 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.967 M	1.7 M	1.55 M	1.2 M	0.0264 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.491 M	0.596 M	0.552 M	0.479 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		2.18 M	2.96 M	3.3 M	2.72 M	0.0463 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		2.15 M	2.34 M	2.92 M	2.36 M	0.0437 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.15 M	1.31 M	1.77 M	1.3 M	0.0197 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.981 M	1.4 M	1.44 M	1.28 M	0.0263 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.89 M	2.06 M	2.71 M	1.98 M	0.0243 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.558 M	0.689 M	0.972 M	0.63 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.15 M	1.26 M	1.71 M	1.25 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.789 M	1.01 M	1.12 M	0.85 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.221 M	0.206 M	0.34 M	0.249 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.989 M	0.898 M	1.36 M	1.03 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		14.2	18.1	21.3	16.4	0.202	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BE4-01	TP3BE4-02	TP3BE4-03	TP3BE4-04	TP3BE5-01	TP3BE5-02
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018
			SDG Ref	180504-98	180504-98	180504-98	180504-98	180504-98	180504-98
			Lab Sample No.(s)	17502263	17502270	17502276	17502280	17502293	17502297
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89	96.8	102	93.6	94	92.9
Acenaphthene-d10 % recovery**	%	TM218		93.1	102	107	90.3	93.2	98.9
Phenanthrene-d10 % recovery**	%	TM218		85	99.4	105	83.2	92.4	96.9
Chrysene-d12 % recovery**	%	TM218		74.7	110	68.8	53.3	90.6	97.1
Perylene-d12 % recovery**	%	TM218		71.1	108	41.1	40.1	98.9	96.3
Naphthalene	<0.009 mg/kg	TM218		1.47 M	372 M	1550 M	0.472 M	1.33 M	3.1 M
Acenaphthylene	<0.012 mg/kg	TM218		0.163 M	5.07 M	2.08 M	<0.012 M	0.336 M	1 M
Acenaphthene	<0.008 mg/kg	TM218		0.051 M	0.31 M	0.245 M	0.0307 M	0.106 M	0.107 M
Fluorene	<0.01 mg/kg	TM218		0.149 M	3.32 M	1.45 M	0.0792 M	0.341 M	0.648 M
Phenanthrene	<0.015 mg/kg	TM218		0.727 M	11.7 M	5.36 M	0.37 M	2.02 M	3.82 M
Anthracene	<0.016 mg/kg	TM218		0.228 M	2.05 M	1.08 M	0.0975 M	0.606 M	1.16 M
Fluoranthene	<0.017 mg/kg	TM218		1.57 M	3.29 M	1.87 M	0.271 M	3.2 M	7.71 M
Pyrene	<0.015 mg/kg	TM218		1.17 M	2.49 M	1.53 M	0.392 M	2.39 M	5.63 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.76 M	0.976 M	0.501 M	0.047 M	1.52 M	3.68 M
Chrysene	<0.01 mg/kg	TM218		0.774 M	1.04 M	0.541 M	0.0438 M	1.32 M	3.74 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.11 M	1.45 M	0.568 M	0.0658 M	1.93 M	5.53 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.426 M	0.509 M	0.261 M	0.0184 M	0.751 M	2.06 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.742 M	0.831 M	0.338 M	0.028 M	1.54 M	3.99 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.535 M	0.702 M	0.261 M	<0.018 M	0.974 M	3.32 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.117 M	0.161 M	<0.23 M	<0.023 M	0.309 M	0.735 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.482 M	0.623 M	0.328 M	<0.024 M	1.17 M	2.76 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		10.5	407	1570	1.92	19.8	49

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BE4-V	TP3BE5-V				
			Depth (m)	4.00 - 4.00	2.50 - 2.50				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	02/05/2018	02/05/2018				
			Sample Time	00:00	00:00				
			Date Received	04/05/2018	04/05/2018				
			SDG Ref	180504-98	180504-98				
			Lab Sample No.(s)	17502286	17502301				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91	93.7				
Acenaphthene-d10 % recovery**	%	TM218		95.5	96.4				
Phenanthrene-d10 % recovery**	%	TM218		88.7	92.8				
Chrysene-d12 % recovery**	%	TM218		89.8	106				
Perylene-d12 % recovery**	%	TM218		86.8	106				
Naphthalene	<0.009 mg/kg	TM218		0.0354 M	0.0279 M				
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M				
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M				
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M				
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	0.0288 M				
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M				
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	0.0537 M				
Pyrene	<0.015 mg/kg	TM218		<0.015 M	0.0439 M				
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	0.0262 M				
Chrysene	<0.01 mg/kg	TM218		<0.01 M	0.0394 M				
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	0.051 M				
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M				
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	0.025 M				
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M				
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M				
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M				
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	0.296				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BC4-01	TP3BC4-02	TP3BC4-03	TP3BC4-04	TP3BC4-V	TP3BC6-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	3.40 - 3.40	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018
			SDG Ref	180504-98	180504-98	180504-98	180504-98	180504-98	180504-98
			Lab Sample No.(s)	17502252	17502310	17502314	17502318	17502322	17502306
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		43	58	50	58	118	64
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		0.334	0.278	0.236	0.318	<0.176	0.611
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0837	0.0541	<0.04	0.0613	<0.04	0.0755
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0487	0.0443	<0.04	0.0613	<0.04	0.169
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0604	0.0497	0.0533	0.0452	<0.04	0.126
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.04	4.93	3.8	5.13	0.535	0.614
Aliphatics >C16-C21	<0.1 mg/kg	TM173		21.3	35.5	19	98.5	1.47	0.521
Aliphatics >C21-C35	<0.1 mg/kg	TM173		28	76	46.4	57	4.69	11.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		6.73	30.9	15.3	8.53	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		58.1	147	84.5	169	6.7	12.2
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0508	0.0519	<0.04	0.0667	<0.04	0.112
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0402	<0.04	<0.04	<0.04	<0.04	0.0844
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		7.09	8.03	7.66	2.34	0.449	0.823
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		34.2	47.4	31.7	33	1.56	2.76
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		92.2	143	89	47.2	21.3	39.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		31	72.9	37.2	13.4	2.09	7.87
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		11.1	28.7	14.5	4.71	<0.1	1.52
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		165	271	166	95.9	25.4	51.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		223	419	250	265	32.1	63.9

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BD4-01	TP3BD4-02	TP3BD4-03	TP3BD4-04	TP3BD4-V	TP3BD6-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	3.40 - 3.40	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018
			SDG Ref	180504-98	180504-98	180504-98	180504-98	180504-98	180504-98
			Lab Sample No.(s)	17502326	17502331	17502335	17502339	17502258	17501927
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		93	70	83	68	101	109
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	0.779	0.236	0.257	0.36	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	0.0466	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	0.143	0.0533	<0.04	0.0422	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	0.104	<0.04	<0.04	0.0558	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.194	<0.04	0.0858	0.114	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.18	4.73	3.08	2.36	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		9.03	20.8	13.2	12.7	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		43.1	79.4	52	50.9	5.65	0.692
Aliphatics >C35-C44	<0.1 mg/kg	TM173		19.7	30.3	21.5	21.6	1.93	0.622
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		73	135	89.8	87.6	7.58	1.31
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.112	0.0566	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.13	<0.04	0.0572	0.0762	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.62	6.23	3.5	2.44	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		12.8	35.7	20.4	21.3	1.16	0.33
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		43	108	62.8	57.5	13.6	18.6
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		15.6	41.8	24.4	17.2	5.64	1.43
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		5.91	15.9	9.04	5.58	1.21	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		73	191	111	98.4	20.4	20.4
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		146	327	201	186	28.3	21.7

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BE4-01	TP3BE4-02	TP3BE4-03	TP3BE4-04	TP3BE5-01	TP3BE5-02
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018
			SDG Ref	180504-98	180504-98	180504-98	180504-98	180504-98	180504-98
			Lab Sample No.(s)	17502263	17502270	17502276	17502280	17502293	17502297
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		80	47	89	73	61	67
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	277	325	0.312	0.472	1.44
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0439	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	0.0715	0.101	<0.04	0.115	0.0655
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	0.299	0.337	0.0537	0.0626	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	165	194	0.076	0.0845	0.756
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	33.2	14.4	2.18	6	2.92
Aliphatics >C16-C21	<0.1 mg/kg	TM173		6.73	979	410	16.3	23.7	19.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		16.6	164	120	70	140	39.8
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.7	14.3	17.8	14.7	105	6.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		25	1190	562	103	274	68.8
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	0.116	0.0952	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	0.13	0.107	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.325	0.35	0.0445	0.0747	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	110	130	0.0511	0.056	0.504
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.468	25.2	19.2	1.43	5.01	2.67
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		8.09	316	166	11.5	26.1	25.5
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		23.2	97.5	91.6	20.2	116	94
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		6.24	14.9	16.2	5.71	75	30.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		1.8	4.98	6.24	2.17	31.7	9.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		38	454	293	38.9	222	152
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		63.1	1920	1180	142	497	223

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BE4-V	TP3BE5-V				
			Depth (m)	4.00 - 4.00	2.50 - 2.50				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	02/05/2018	02/05/2018				
			Sample Time	00:00	00:00				
			Date Received	04/05/2018	04/05/2018				
			SDG Ref	180504-98	180504-98				
			Lab Sample No.(s)	17502286	17502301				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		98	74				
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	0.313				
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04				
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	0.0521				
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	0.0664				
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0658	0.0537				
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	0.63				
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	0.643				
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	3.85				
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	1.88				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	7.01				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.0442				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0429	<0.04				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	0.343				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		6.7	42				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	53				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	26				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		6.7	95.3				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		6.74	103				

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BC4-01	TP3BC4-02	TP3BC4-03	TP3BC4-04	TP3BC4-V	TP3BC6-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	3.40 - 3.40	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018
			SDG Ref	180504-98	180504-98	180504-98	180504-98	180504-98	180504-98
			Lab Sample No.(s)	17502252	17502310	17502314	17502318	17502322	17502306
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.8	100	94.9	98.6	106	104
Toluene-d8**	%	TM116		92.8	93.5	96.1	92.3	97.1	98.6
4-Bromofluorobenzene**	%	TM116		79.4	81.4	84.3	79.7	99.3	95.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.01 M	<0.1 M	<0.2 M	<0.1 #	<0.01 M	<0.01 M
Benzene	<0.009 mg/kg	TM116		<0.009 M	<0.09 M	<0.18 M	<0.09 #	<0.009 M	<0.009 M
Toluene	<0.007 mg/kg	TM116		<0.007 M	<0.07 M	<0.14 M	<0.07 #	<0.007 M	<0.007 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.004 M	<0.04 M	<0.08 M	<0.04 #	<0.004 M	<0.004 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.01 #	<0.1 #	<0.2 #	<0.1 #	<0.01 #	<0.01 #
o-Xylene	<0.01 mg/kg	TM116		<0.01 M	<0.1 M	<0.2 M	<0.1 #	<0.01 M	<0.01 M
Naphthalene	<0.013 mg/kg	TM116		0.576 M	1.05 M	1.08 M	0.359 #		<0.013 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.04	<0.4	<0.8	<0.4	<0.04	<0.04

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BD4-01	TP3BD4-02	TP3BD4-03	TP3BD4-04	TP3BD4-V	TP3BD6-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	3.40 - 3.40	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018
			SDG Ref	180504-98	180504-98	180504-98	180504-98	180504-98	180504-98
			Lab Sample No.(s)	17502326	17502331	17502335	17502339	17502258	17501927
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	96.2	101	103	104	113
Toluene-d8**	%	TM116		97.9	94.3	97.6	96	98.5	97.5
4-Bromofluorobenzene**	%	TM116		97.9	80.1	95	90.6	100	99.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.01 M	<0.1 M	<0.01 M	<0.01 M	<0.01 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.009 M	<0.09 M	<0.009 M	<0.009 M	<0.009 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.007 M	<0.07 M	<0.007 M	<0.007 M	<0.007 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.004 M	<0.04 M	<0.004 M	<0.004 M	<0.004 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.01 #	<0.1 #	<0.01 #	<0.01 #	<0.01 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.01 M	<0.1 M	<0.01 M	<0.01 M	<0.01 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.013 M	1.21 M	0.183 M	2.96 M		<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.04	<0.4	<0.04	<0.04	<0.04	<0.4

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BE4-01	TP3BE4-02	TP3BE4-03	TP3BE4-04	TP3BE5-01	TP3BE5-02
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018	02/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018	04/05/2018
			SDG Ref	180504-98	180504-98	180504-98	180504-98	180504-98	180504-98
			Lab Sample No.(s)	17502263	17502270	17502276	17502280	17502293	17502297
			AGS Reference						
Dibromofluoromethane**	%	TM116		110	107	97.1	96.9	102	97.4
Toluene-d8**	%	TM116		96.6	93.5	97.8	98.3	94.8	96.2
4-Bromofluorobenzene**	%	TM116		92.6	82.7	90.3	96.4	84.4	85.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Benzene	<0.009 mg/kg	TM116		<0.009 M	0.0689 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M
Toluene	<0.007 mg/kg	TM116		<0.007 M	0.067 M	0.0862 M	<0.007 M	<0.007 M	<0.007 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.004 M	<0.004 M	<0.004 M	<0.004 M	<0.004 M	<0.004 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.01 #	0.0668 #	0.0353 #	<0.01 #	<0.01 #	<0.01 #
o-Xylene	<0.01 mg/kg	TM116		<0.01 M	0.0341 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Naphthalene	<0.013 mg/kg	TM116		0.439 M	<2.6 3 & M	<2.6 3 ♦ M	0.638 M	1.21 M	13.7 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.04	0.237	0.122	<0.04	<0.04	<0.04

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3BE4-V	TP3BE5-V				
			Depth (m)	4.00 - 4.00	2.50 - 2.50				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	02/05/2018	02/05/2018				
			Sample Time	00:00	00:00				
			Date Received	04/05/2018	04/05/2018				
			SDG Ref	180504-98	180504-98				
			Lab Sample No.(s)	17502286	17502301				
			AGS Reference						
Dibromofluoromethane**	%	TM116		111	108				
Toluene-d8**	%	TM116		97.7	95.5				
4-Bromofluorobenzene**	%	TM116		96.1	87.8				
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.01 M	<0.1 M				
Benzene	<0.009 mg/kg	TM116		<0.009 M	<0.09 M				
Toluene	<0.007 mg/kg	TM116		<0.007 M	<0.07 M				
Ethylbenzene	<0.004 mg/kg	TM116		<0.004 M	<0.04 M				
p/m-Xylene	<0.01 mg/kg	TM116		<0.01 #	<0.1 #				
o-Xylene	<0.01 mg/kg	TM116		<0.01 M	<0.1 M				
Sum of BTEX	<0.04 mg/kg	TM116		<0.04	<0.4				

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3BC4-01 0.50 - 0.50 SOLID 02/05/2018 00:00:00 08/05/2018 06:16:38 180504-98 17502252 TM048	15/05/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3BC4-03 2.00 - 2.00 SOLID 02/05/2018 00:00:00 08/05/2018 06:22:20 180504-98 17502314 TM048	15/05/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3BD4-01 0.50 - 0.50 SOLID 02/05/2018 00:00:00 06/05/2018 08:35:07 180504-98 17502326 TM048	15/05/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3BD4-03 2.00 - 2.00 SOLID 02/05/2018 00:00:00 06/05/2018 11:24:28 180504-98 17502335 TM048	15/05/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3BE4-01 0.50 - 0.50 SOLID 02/05/2018 00:00:00 06/05/2018 09:23:03 180504-98 17502263 TM048	15/05/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3BE4-03 2.00 - 2.00 SOLID 02/05/2018 00:00:00 06/05/2018 09:20:29 180504-98 17502276 TM048	15/05/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**	**Report Number:** 460210
Location:	Llanwern	**Order Number:** LLA424	**Superseded Report:** 460105

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3BE5-01 1.00 - 1.00 SOLID 02/05/2018 00:00:00 06/05/2018 09:34:33 180504-98 17502293 TM048	15/05/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.5
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502252
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BC4-01
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000442	<0.0000127	0.00442	<0.000127	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Arsenic	0.00183	<0.0005	0.0183	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000066	<0.000005	0.00066	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000232	<0.000005	0.00232	<0.00005	-	-	-
Anthracene (diss.filt)	0.000048	<0.000005	0.00048	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000187	<0.000005	0.00187	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000423	<0.000005	0.000423	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000627	<0.000005	0.000627	<0.00005	-	-	-
Pyrene (diss.filt)	0.000179	<0.000005	0.00179	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000072	<0.000005	0.00072	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000106	<0.000005	0.00106	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000586	<0.000005	0.000586	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000665	<0.000002	0.000665	<0.00002	-	-	-
Copper	0.00167	<0.0003	0.0167	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Lead	0.000923	<0.0002	0.00923	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.000103	<0.000005	0.00103	<0.00005	-	-	-
Manganese	0.0139	<0.003	0.139	<0.03	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	9.87
Conductivity (µS/cm)	145.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

14/06/2018 13:10:48

13:09:41 14/06/2018

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.5
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502252
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BC4-01
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00181	<0.000082	0.0181	<0.00082	-	-	-
Nickel	0.00054	<0.0004	0.0054	<0.004	-	-	-
Selenium	0.00384	<0.001	0.0384	<0.01	-	-	-
Vanadium	0.097	<0.001	0.97	<0.01	-	-	-
Zinc	0.00182	<0.001	0.0182	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.954	<0.019	9.54	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00436	<0.001	0.0436	<0.01	-	-	-
Toluene	0.00288	<0.001	0.0288	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	9.87
Conductivity (µS/cm)	145.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502263
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BE4-01
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.034	<0.01	0.34	<0.1	-	-	-
Ammoniacal Nitrogen as N	9.19	<0.2	91.9	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000177	<0.00001	0.000177	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000215	<0.00001	0.00215	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Arsenic	0.019	<0.0005	0.19	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000665	<0.000005	0.000665	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000185	<0.000005	0.00185	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000471	<0.000005	0.000471	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000152	<0.000005	0.00152	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000517	<0.000005	0.000517	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000539	<0.000005	0.000539	<0.00005	-	-	-
Pyrene (diss.filt)	0.000129	<0.000005	0.00129	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000657	<0.000005	0.000657	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000942	<0.000005	0.000942	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000371	<0.000005	0.000371	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000059	<0.000002	0.00059	<0.00002	-	-	-
Copper	0.00391	<0.0003	0.0391	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Lead	0.00079	<0.0002	0.0079	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000697	<0.000005	0.000697	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000538	<0.000005	0.000538	<0.00005	-	-	-
Manganese	0.00798	<0.003	0.0798	<0.03	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	9.13
Conductivity (µS/cm)	188.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502263
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BE4-01
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.0013	<0.000082	0.013	<0.00082	-	-	-
Nickel	0.00097	<0.0004	0.0097	<0.004	-	-	-
Selenium	0.0132	<0.001	0.132	<0.01	-	-	-
Vanadium	0.122	<0.001	1.22	<0.01	-	-	-
Zinc	0.00411	<0.001	0.0411	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.15	<0.019	1.5	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00153	<0.001	0.0153	<0.01	-	-	-
Toluene	0.0013	<0.001	0.013	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	9.13
Conductivity (µS/cm)	188.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502270
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BE4-02
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.02	<0.01	0.2	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	0.027	<0.01	0.27	<0.1	-	-	-
Aromatics >EC12-EC16	0.155	<0.01	1.55	<0.1	-	-	-
Aromatics >EC16-EC21	0.084	<0.01	0.84	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	0.084	<0.01	0.84	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.239	<0.01	2.39	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.269	<0.01	2.69	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	194	<0.005	1940	<0.05	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.221	<0.0025	2.21	<0.025	-	-	-
Arsenic	0.00429	<0.0005	0.0429	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.901	<0.0025	9.01	<0.025	-	-	-
Fluoranthene (diss.filt)	0.822	<0.0025	8.22	<0.025	-	-	-
Anthracene (diss.filt)	0.889	<0.0025	8.89	<0.025	-	-	-
Phenanthrene (diss.filt)	0.75	<0.0025	7.5	<0.025	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.356	<0.0025	3.56	<0.025	-	-	-
Chrysene (diss.filt)	2.83	<0.0025	28.3	<0.025	-	-	-
Pyrene (diss.filt)	0.829	<0.0025	8.29	<0.025	-	-	-
Benzo(a)anthracene (diss.filt)	2.12	<0.0025	21.2	<0.025	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	2.11	<0.0025	21.1	<0.025	-	-	-
Benzo(k)fluoranthene (diss.filt)	3.03	<0.0025	30.3	<0.025	-	-	-
Benzo(a)pyrene (diss.filt)	2.11	<0.001	21.1	<0.01	-	-	-
Copper	0.002	<0.0003	0.02	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	1.7	<0.0025	17	<0.025	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	3.15	<0.0025	31.5	<0.025	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	2.41	<0.0025	24.1	<0.025	-	-	-
Manganese	0.0177	<0.003	0.177	<0.03	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	7.77
Conductivity (µS/cm)	179.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502270
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BE4-02
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	219	<0.041	2190	<0.41	-	-	-
Nickel	0.00123	<0.0004	0.0123	<0.004	-	-	-
Selenium	0.00178	<0.001	0.0178	<0.01	-	-	-
Vanadium	0.00827	<0.001	0.0827	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00558	<0.001	0.0558	<0.01	-	-	-
Toluene	0.00647	<0.001	0.0647	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	0.0057	<0.001	0.057	<0.01	-	-	-
o-Xylene	0.00247	<0.001	0.0247	<0.01	-	-	-
Total Xylenes	0.00817	<0.002	0.0817	<0.02	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	7.77
Conductivity (µS/cm)	179.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502276
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BE4-03
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.015	<0.01	0.15	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	0.015	<0.01	0.15	<0.1	-	-	-
Aromatics >EC12-EC16	0.164	<0.01	1.64	<0.1	-	-	-
Aromatics >EC16-EC21	0.062	<0.01	0.62	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	0.062	<0.01	0.62	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.226	<0.01	2.26	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	9.86	<0.01	98.6	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	186	<0.005	1860	<0.05	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.212	<0.0025	2.12	<0.025	-	-	-
Arsenic	0.00283	<0.0005	0.0283	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.808	<0.0025	8.08	<0.025	-	-	-
Fluoranthene (diss.filt)	0.87	<0.0025	8.7	<0.025	-	-	-
Anthracene (diss.filt)	0.854	<0.0025	8.54	<0.025	-	-	-
Phenanthrene (diss.filt)	0.758	<0.0025	7.58	<0.025	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.347	<0.0025	3.47	<0.025	-	-	-
Chrysene (diss.filt)	2.25	<0.0025	22.5	<0.025	-	-	-
Pyrene (diss.filt)	0.923	<0.0025	9.23	<0.025	-	-	-
Benzo(a)anthracene (diss.filt)	1.7	<0.0025	17	<0.025	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	1.98	<0.0025	19.8	<0.025	-	-	-
Benzo(k)fluoranthene (diss.filt)	2.8	<0.0025	28	<0.025	-	-	-
Benzo(a)pyrene (diss.filt)	1.93	<0.001	19.3	<0.01	-	-	-
Copper	0.00176	<0.0003	0.0176	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	2.22	<0.0025	22.2	<0.025	-	-	-
Lead	0.000982	<0.0002	0.00982	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	3.28	<0.0025	32.8	<0.025	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	2.49	<0.0025	24.9	<0.025	-	-	-
Manganese	0.0118	<0.003	0.118	<0.03	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	8.06
Conductivity (µS/cm)	230.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502276
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BE4-03
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	209	<0.041	2090	<0.41	-	-	-
Nickel	0.000995	<0.0004	0.00995	<0.004	-	-	-
Selenium	0.004	<0.001	0.04	<0.01	-	-	-
Vanadium	0.00468	<0.001	0.0468	<0.01	-	-	-
Zinc	0.00306	<0.001	0.0306	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.14	<0.019	1.4	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	9.62	<0.05	96.2	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	0.022	<0.01	0.22	<0.1	-	-	-
Aliphatics >C10-C12	5.72	<0.01	57.2	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.032	<0.01	0.32	<0.1	-	-	-
Aromatics >EC10-EC12	3.81	<0.01	38.1	<0.1	-	-	-
Benzene by GC	0.007	<0.007	0.07	<0.07	-	-	-
Toluene by GC	0.009	<0.004	0.09	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.013	<0.008	0.13	<0.08	-	-	-
o Xylene by GC	0.004	<0.003	0.04	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.017	<0.011	0.17	<0.11	-	-	-
Sum of BTEX by GC	0.033	<0.028	0.33	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00739	<0.001	0.0739	<0.01	-	-	-
Toluene	0.00983	<0.001	0.0983	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	0.0103	<0.001	0.103	<0.01	-	-	-
o-Xylene	0.00347	<0.001	0.0347	<0.01	-	-	-
Total Xylenes	0.0138	<0.002	0.138	<0.02	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	8.06
Conductivity (µS/cm)	230.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502280
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BE4-04
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	1.12	<0.2	11.2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.234	<0.0001	2.34	<0.001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000517	<0.00005	0.00517	<0.0005	-	-	-
Arsenic	0.00514	<0.0005	0.0514	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000343	<0.00005	0.00343	<0.0005	-	-	-
Fluoranthene (diss.filt)	0.0174	<0.00005	0.174	<0.0005	-	-	-
Anthracene (diss.filt)	0.0134	<0.00005	0.134	<0.0005	-	-	-
Phenanthrene (diss.filt)	0.00912	<0.00005	0.0912	<0.0005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.00277	<0.00005	0.0277	<0.0005	-	-	-
Chrysene (diss.filt)	0.0188	<0.00005	0.188	<0.0005	-	-	-
Pyrene (diss.filt)	0.0173	<0.00005	0.173	<0.0005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0195	<0.00005	0.195	<0.0005	-	-	-
Chromium	0.00604	<0.001	0.0604	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0201	<0.00005	0.201	<0.0005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0201	<0.00005	0.201	<0.0005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0196	<0.00002	0.196	<0.0002	-	-	-
Copper	0.000624	<0.0003	0.00624	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0186	<0.00005	0.186	<0.0005	-	-	-
Lead	0.00213	<0.0002	0.0213	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0232	<0.00005	0.232	<0.0005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0213	<0.00005	0.213	<0.0005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	10.30
Conductivity (µS/cm)	235.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502280
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BE4-04
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.456	<0.00082	4.56	<0.0082	-	-	-
Nickel	0.00342	<0.0004	0.0342	<0.004	-	-	-
Selenium	0.0208	<0.001	0.208	<0.01	-	-	-
Vanadium	0.0794	<0.001	0.794	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0482	<0.019	0.482	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	10.30
Conductivity (µS/cm)	235.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502293
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BE5-01
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.304	<0.2	3.04	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000192	<0.00001	0.000192	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000545	<0.00001	0.00545	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000677	<0.000005	0.000677	<0.00005	-	-	-
Arsenic	0.00293	<0.0005	0.0293	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000628	<0.000005	0.000628	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000179	<0.000005	0.00179	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000567	<0.000005	0.000567	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000197	<0.000005	0.00197	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000522	<0.000005	0.000522	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000242	<0.000005	0.000242	<0.00005	-	-	-
Pyrene (diss.filt)	0.000132	<0.000005	0.00132	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000295	<0.000005	0.000295	<0.00005	-	-	-
Chromium	0.00203	<0.001	0.0203	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000267	<0.000005	0.000267	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000975	<0.000005	0.0000975	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000162	<0.000002	0.000162	<0.00002	-	-	-
Copper	0.00822	<0.0003	0.0822	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000772	<0.0002	0.00772	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Manganese	0.00646	<0.003	0.0646	<0.03	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	9.71
Conductivity (µS/cm)	200.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502293
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BE5-01
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00143	<0.000082	0.0143	<0.00082	-	-	-
Nickel	0.00202	<0.0004	0.0202	<0.004	-	-	-
Selenium	0.00204	<0.001	0.0204	<0.01	-	-	-
Vanadium	0.186	<0.001	1.86	<0.01	-	-	-
Zinc	0.0052	<0.001	0.052	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.581	<0.019	5.81	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00103	<0.001	0.0103	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	9.71
Conductivity (µS/cm)	200.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502297
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BE5-02
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000112	<0.00001	0.00112	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000653	<0.000005	0.0000653	<0.00005	-	-	-
Arsenic	0.000529	<0.0005	0.00529	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000309	<0.000005	0.000309	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000241	<0.000005	0.000241	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000755	<0.000005	0.000755	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000184	<0.000005	0.000184	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.000103	<0.000005	0.00103	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.0011	<0.001	0.011	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00119	<0.0003	0.0119	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000429	<0.0002	0.00429	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	0.00588	<0.003	0.0588	<0.03	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	344.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502297
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BE5-02
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000492	<0.000082	0.00492	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00193	<0.001	0.0193	<0.01	-	-	-
Vanadium	0.0876	<0.001	0.876	<0.01	-	-	-
Zinc	0.00143	<0.001	0.0143	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.363	<0.019	3.63	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene	<0.01	<0.01	<0.1	<0.1	-	-	-
Ethylbenzene	<0.01	<0.01	<0.1	<0.1	-	-	-
p/m-Xylene	<0.01	<0.01	<0.1	<0.1	-	-	-
o-Xylene	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Xylenes	<0.02	<0.02	<0.2	<0.2	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	344.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502310
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BC4-02
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000296	<0.00001	0.000296	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000108	<0.00001	0.00108	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Arsenic	0.00896	<0.0005	0.0896	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000473	<0.000005	0.000473	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000249	<0.000005	0.00249	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000805	<0.000005	0.000805	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000174	<0.000005	0.00174	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000357	<0.000005	0.000357	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000619	<0.000005	0.000619	<0.00005	-	-	-
Pyrene (diss.filt)	0.00018	<0.000005	0.0018	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000619	<0.000005	0.000619	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000045	<0.000005	0.00045	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000648	<0.000002	0.000648	<0.00002	-	-	-
Copper	0.00456	<0.0003	0.0456	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Lead	0.00223	<0.0002	0.0223	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000988	<0.000005	0.000988	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000742	<0.000005	0.000742	<0.00005	-	-	-
Manganese	0.0235	<0.003	0.235	<0.03	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	7.13
Conductivity (µS/cm)	146.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502310
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BC4-02
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00141	<0.000082	0.0141	<0.00082	-	-	-
Nickel	0.00119	<0.0004	0.0119	<0.004	-	-	-
Selenium	0.00431	<0.001	0.0431	<0.01	-	-	-
Vanadium	0.075	<0.001	0.75	<0.01	-	-	-
Zinc	0.011	<0.001	0.11	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.432	<0.019	4.32	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.0022	<0.001	0.022	<0.01	-	-	-
Toluene	0.00167	<0.001	0.0167	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	0.00106	<0.001	0.0106	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	7.13
Conductivity (µS/cm)	146.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.61
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.8
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502314
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BC4-03
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.01	<0.01	0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000148	<0.00001	0.000148	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000189	<0.00001	0.00189	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00002	<0.000005	0.0002	<0.00005	-	-	-
Arsenic	0.0025	<0.0005	0.025	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000608	<0.000005	0.000608	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000176	<0.000005	0.00176	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000566	<0.000005	0.000566	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000187	<0.000005	0.00187	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000504	<0.000005	0.000504	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000375	<0.000005	0.000375	<0.00005	-	-	-
Pyrene (diss.filt)	0.000124	<0.000005	0.00124	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000499	<0.000005	0.000499	<0.00005	-	-	-
Chromium	0.00102	<0.001	0.0102	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00005	<0.000005	0.0005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000221	<0.000005	0.000221	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000315	<0.000002	0.000315	<0.00002	-	-	-
Copper	0.00177	<0.0003	0.0177	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.00000597	<0.000005	0.0000597	<0.00005	-	-	-
Lead	0.000264	<0.0002	0.00264	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000366	<0.000005	0.000366	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000238	<0.000005	0.000238	<0.00005	-	-	-
Manganese	0.00352	<0.003	0.0352	<0.03	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	10.53
Conductivity (µS/cm)	219.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.61
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.8
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502314
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BC4-03
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00112	<0.000082	0.0112	<0.00082	-	-	-
Nickel	0.000824	<0.0004	0.00824	<0.004	-	-	-
Selenium	0.00372	<0.001	0.0372	<0.01	-	-	-
Vanadium	0.091	<0.001	0.91	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.477	<0.019	4.77	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00181	<0.001	0.0181	<0.01	-	-	-
Toluene	0.0014	<0.001	0.014	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	10.53
Conductivity (µS/cm)	219.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502318
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BC4-04
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000208	<0.00001	0.000208	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000371	<0.00001	0.00371	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000416	<0.000005	0.000416	<0.00005	-	-	-
Arsenic	0.00253	<0.0005	0.0253	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000132	<0.000005	0.00132	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000417	<0.000005	0.00417	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000991	<0.000005	0.000991	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000407	<0.000005	0.00407	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000936	<0.000005	0.000936	<0.00005	-	-	-
Pyrene (diss.filt)	0.000287	<0.000005	0.00287	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000138	<0.000005	0.00138	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000604	<0.000005	0.000604	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000913	<0.000002	0.000913	<0.00002	-	-	-
Copper	0.00191	<0.0003	0.0191	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Lead	0.000776	<0.0002	0.00776	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000106	<0.000005	0.00106	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000798	<0.000005	0.000798	<0.00005	-	-	-
Manganese	0.00536	<0.003	0.0536	<0.03	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	9.90
Conductivity (µS/cm)	190.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502318
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BC4-04
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00256	<0.000082	0.0256	<0.00082	-	-	-
Nickel	0.000656	<0.0004	0.00656	<0.004	-	-	-
Selenium	0.00359	<0.001	0.0359	<0.01	-	-	-
Vanadium	0.0675	<0.001	0.675	<0.01	-	-	-
Zinc	0.0419	<0.001	0.419	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.899	<0.019	8.99	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00148	<0.001	0.0148	<0.01	-	-	-
Toluene	0.00109	<0.001	0.0109	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	9.90
Conductivity (µS/cm)	190.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502326
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BD4-01
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.08	<0.01	0.8	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000134	<0.00001	0.00134	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00467	<0.0005	0.0467	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000593	<0.000005	0.000593	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000202	<0.000005	0.000202	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.00000867	<0.000005	0.0000867	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000721	<0.000005	0.000721	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.00000533	<0.000005	0.0000533	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000353	<0.000002	0.0000353	<0.00002	-	-	-
Copper	0.000878	<0.0003	0.00878	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.00244	<0.0002	0.0244	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	0.00648	<0.003	0.0648	<0.03	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	9.10
Conductivity (µS/cm)	225.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502326
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BD4-01
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000331	<0.000082	0.00331	<0.00082	-	-	-
Nickel	0.000584	<0.0004	0.00584	<0.004	-	-	-
Selenium	0.00199	<0.001	0.0199	<0.01	-	-	-
Vanadium	0.0818	<0.001	0.818	<0.01	-	-	-
Zinc	0.00258	<0.001	0.0258	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.166	<0.019	1.66	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.081	<0.05	0.81	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.039	<0.01	0.39	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.026	<0.01	0.26	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	9.10
Conductivity (µS/cm)	225.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502331
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BD4-02
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.00014	<0.00001	0.0014	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000277	<0.000005	0.000277	<0.00005	-	-	-
Arsenic	0.00539	<0.0005	0.0539	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000995	<0.000005	0.000995	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000294	<0.000005	0.00294	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000656	<0.000005	0.000656	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000232	<0.000005	0.00232	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000681	<0.000005	0.000681	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000462	<0.000005	0.000462	<0.00005	-	-	-
Pyrene (diss.filt)	0.000225	<0.000005	0.00225	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000548	<0.000005	0.000548	<0.00005	-	-	-
Chromium	0.0011	<0.001	0.011	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000639	<0.000005	0.000639	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000278	<0.000005	0.000278	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000422	<0.000002	0.000422	<0.00002	-	-	-
Copper	0.0033	<0.0003	0.033	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.00000661	<0.000005	0.0000661	<0.00005	-	-	-
Lead	0.00135	<0.0002	0.0135	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000447	<0.000005	0.000447	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000276	<0.000005	0.000276	<0.00005	-	-	-
Manganese	0.0146	<0.003	0.146	<0.03	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	10.33
Conductivity (µS/cm)	235.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502331
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BD4-02
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00147	<0.000082	0.0147	<0.00082	-	-	-
Nickel	0.000812	<0.0004	0.00812	<0.004	-	-	-
Selenium	0.0028	<0.001	0.028	<0.01	-	-	-
Vanadium	0.128	<0.001	1.28	<0.01	-	-	-
Zinc	0.00948	<0.001	0.0948	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.209	<0.019	2.09	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	10.33
Conductivity (µS/cm)	235.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502335
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BD4-03
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000732	<0.0000127	0.000732	<0.000127	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00317	<0.0005	0.0317	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000907	<0.000005	0.0000907	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000463	<0.000005	0.000463	<0.00005	-	-	-
Anthracene (diss.filt)	0.00000904	<0.000005	0.0000904	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000322	<0.000005	0.000322	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.00000528	<0.000005	0.0000528	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000106	<0.000005	0.000106	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000513	<0.000005	0.000513	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000983	<0.000005	0.0000983	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000113	<0.000002	0.000113	<0.00002	-	-	-
Copper	0.000773	<0.0003	0.00773	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000691	<0.0002	0.00691	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000199	<0.000005	0.000199	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Manganese	0.00521	<0.003	0.0521	<0.03	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	10.75
Conductivity (µS/cm)	305.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502335
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BD4-03
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000319	<0.000082	0.00319	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0012	<0.001	0.012	<0.01	-	-	-
Vanadium	0.0615	<0.001	0.615	<0.01	-	-	-
Zinc	0.00137	<0.001	0.0137	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.11	<0.019	1.1	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	<0.001	<0.001	<0.01	<0.01	-	-	-
Toluene	<0.001	<0.001	<0.01	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	10.75
Conductivity (µS/cm)	305.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502339
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BD4-04
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.01	<0.01	0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000415	<0.00001	0.000415	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00443	<0.0005	0.0443	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000234	<0.000005	0.000234	<0.00005	-	-	-
Anthracene (diss.filt)	0.00000551	<0.000005	0.0000551	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000197	<0.000005	0.000197	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.00000526	<0.000005	0.0000526	<0.00005	-	-	-
Pyrene (diss.filt)	0.000023	<0.000005	0.00023	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.00000584	<0.000005	0.0000584	<0.00005	-	-	-
Chromium	0.00371	<0.001	0.0371	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000543	<0.000005	0.0000543	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000793	<0.000002	0.0000793	<0.00002	-	-	-
Copper	0.000439	<0.0003	0.00439	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.00672	<0.0002	0.0672	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.00000876	<0.000005	0.0000876	<0.00005	-	-	-
Manganese	0.00806	<0.003	0.0806	<0.03	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	10.23
Conductivity (µS/cm)	218.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	180504-98
Lab Sample Number(s)	17502339
Sampled Date	02-May-2018
Customer Sample Ref.	TP3BD4-04
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000171	<0.000082	0.00171	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0019	<0.001	0.019	<0.01	-	-	-
Vanadium	0.147	<0.001	1.47	<0.01	-	-	-
Zinc	0.0132	<0.001	0.132	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.845	<0.019	8.45	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	0.004	<0.004	0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
VOC MS (W)							
Benzene	0.00179	<0.001	0.0179	<0.01	-	-	-
Toluene	0.00203	<0.001	0.0203	<0.01	-	-	-
Ethylbenzene	<0.001	<0.001	<0.01	<0.01	-	-	-
p/m-Xylene	0.00149	<0.001	0.0149	<0.01	-	-	-
o-Xylene	<0.001	<0.001	<0.01	<0.01	-	-	-
Total Xylenes	<0.002	<0.002	<0.02	<0.02	-	-	-

Leach Test Information

Date Prepared	08-May-2018
pH (pH Units)	10.23
Conductivity (µS/cm)	218.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180504-98	**Client Reference:**		**Report Number:**	460210
Location:	Llanwern	**Order Number:**	LLA424	**Superseded Report:**	460105

Test Completion Dates

Lab Sample No(s)	17502252	17502310	17502314	17502318	17502322	17502306	17502326	17502331	17502335	17502339
Customer Sample Ref.	TP3BC4-01	TP3BC4-02	TP3BC4-03	TP3BC4-04	TP3BC4-V	TP3BC6-V	TP3BD4-01	TP3BD4-02	TP3BD4-03	TP3BD4-04
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	3.40 - 3.40	3.20 - 3.20	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	16-May-2018		15-May-2018				16-May-2018		16-May-2018	
Ammoniacal Nitrogen	11-May-2018	11-May-2018	11-May-2018	11-May-2018			14-May-2018	14-May-2018	11-May-2018	14-May-2018
Ammonium Soil by Titration	17-May-2018	17-May-2018	17-May-2018	16-May-2018	17-May-2018	17-May-2018	17-May-2018	16-May-2018	17-May-2018	17-May-2018
Anions by Kone (soil)	16-May-2018		16-May-2018				15-May-2018		15-May-2018	
Asbestos ID in Solid Samples	15-May-2018		15-May-2018				15-May-2018		15-May-2018	
CEN 10:1 Leachate (1 Stage)	08-May-2018	08-May-2018	08-May-2018	08-May-2018			08-May-2018	08-May-2018	08-May-2018	08-May-2018
CEN Readings	09-May-2018	12-May-2018	12-May-2018	12-May-2018			13-May-2018	13-May-2018	09-May-2018	13-May-2018
Cyanide Comp/Free/Total/Thiocyanate	16-May-2018	16-May-2018	16-May-2018	16-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018
Dissolved Metals by ICP-MS	14-May-2018	14-May-2018	14-May-2018	14-May-2018			16-May-2018	14-May-2018	14-May-2018	15-May-2018
EPH CWG (Aliphatic) Filtered GC (W)	11-May-2018	15-May-2018	15-May-2018	15-May-2018			15-May-2018	15-May-2018	11-May-2018	15-May-2018
EPH CWG (Aliphatic) GC (S)	16-May-2018	15-May-2018	16-May-2018	15-May-2018	15-May-2018	16-May-2018	16-May-2018	16-May-2018	16-May-2018	15-May-2018
EPH CWG (Aromatic) Filtered GC (W)	11-May-2018	15-May-2018	15-May-2018	15-May-2018			15-May-2018	15-May-2018	11-May-2018	15-May-2018
EPH CWG (Aromatic) GC (S)	16-May-2018	15-May-2018	16-May-2018	15-May-2018	15-May-2018	16-May-2018	16-May-2018	16-May-2018	16-May-2018	15-May-2018
GRO by GC-FID (S)	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018
GRO by GC-FID (W)	15-May-2018	16-May-2018	14-May-2018	14-May-2018			14-May-2018	14-May-2018	11-May-2018	14-May-2018
Mercury Dissolved	15-May-2018	16-May-2018	15-May-2018	16-May-2018			15-May-2018	15-May-2018	15-May-2018	15-May-2018
Metals in solid samples by OES	16-May-2018	17-May-2018	16-May-2018	17-May-2018	16-May-2018	16-May-2018	17-May-2018	17-May-2018	17-May-2018	15-May-2018
PAH by GCMS	16-May-2018	11-May-2018	16-May-2018	11-May-2018	11-May-2018	16-May-2018	11-May-2018	16-May-2018	11-May-2018	11-May-2018
PAH in waters by GC-MS (diss.filt)	11-May-2018	15-May-2018	15-May-2018	15-May-2018			15-May-2018	15-May-2018	11-May-2018	15-May-2018
pH	08-May-2018	08-May-2018	08-May-2018	08-May-2018	08-May-2018	08-May-2018	08-May-2018	08-May-2018	08-May-2018	08-May-2018
pH Value of Filtered Water	11-May-2018	11-May-2018	11-May-2018	11-May-2018			11-May-2018	11-May-2018	10-May-2018	11-May-2018
Phenols by HPLC (S)	15-May-2018	15-May-2018	15-May-2018	16-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018
Sample description	06-May-2018	06-May-2018	06-May-2018	06-May-2018	06-May-2018	06-May-2018	06-May-2018	06-May-2018	06-May-2018	06-May-2018
Total Organic Carbon	14-May-2018	15-May-2018	14-May-2018	15-May-2018	15-May-2018	15-May-2018	14-May-2018	15-May-2018	15-May-2018	14-May-2018
Total Sulphate	16-May-2018		16-May-2018				16-May-2018		16-May-2018	
Total Sulphur	09-May-2018		09-May-2018				14-May-2018		14-May-2018	
TPH CWG Filtered (W)	15-May-2018	16-May-2018	15-May-2018	15-May-2018			15-May-2018	15-May-2018	11-May-2018	15-May-2018
TPH CWG GC (S)	16-May-2018	15-May-2018	16-May-2018	15-May-2018	15-May-2018	16-May-2018	16-May-2018	16-May-2018	16-May-2018	15-May-2018
VOC MS (S)	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018
VOC MS (W)	11-May-2018	11-May-2018	11-May-2018	11-May-2018			11-May-2018	11-May-2018	10-May-2018	11-May-2018

Lab Sample No(s)	17502258	17501927	17502263	17502270	17502276	17502280	17502293	17502297	17502286	17502301
Customer Sample Ref.	TP3BD4-V	TP3BD6-V	TP3BE4-01	TP3BE4-02	TP3BE4-03	TP3BE4-04	TP3BE5-01	TP3BE5-02	TP3BE4-V	TP3BE5-V
AGS Ref.										
Depth	3.40 - 3.40	3.20 - 3.20	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	1.00 - 1.00	2.00 - 2.00	4.00 - 4.00	2.50 - 2.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)			15-May-2018		16-May-2018		16-May-2018			
Ammoniacal Nitrogen			14-May-2018	14-May-2018	14-May-2018	14-May-2018	14-May-2018	11-May-2018		
Ammonium Soil by Titration	17-May-2018	16-May-2018	17-May-2018	17-May-2018	17-May-2018	16-May-2018	17-May-2018	17-May-2018	17-May-2018	17-May-2018
Anions by Kone (soil)			16-May-2018		16-May-2018		15-May-2018			
Asbestos ID in Solid Samples			15-May-2018		15-May-2018		15-May-2018			
CEN 10:1 Leachate (1 Stage)			08-May-2018	15-May-2018	15-May-2018	08-May-2018	08-May-2018	08-May-2018		
CEN Readings			13-May-2018	16-May-2018	16-May-2018	13-May-2018	13-May-2018	12-May-2018		
Cyanide Comp/Free/Total/Thiocyanate	15-May-2018	16-May-2018	15-May-2018	15-May-2018	15-May-2018	16-May-2018	15-May-2018	16-May-2018	15-May-2018	15-May-2018
Dissolved Metals by ICP-MS			14-May-2018	14-May-2018	14-May-2018	16-May-2018	15-May-2018	14-May-2018		
EPH CWG (Aliphatic) Filtered GC (W)			15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018		
EPH CWG (Aliphatic) GC (S)	16-May-2018	17-May-2018	17-May-2018	17-May-2018	17-May-2018	15-May-2018	17-May-2018	17-May-2018	16-May-2018	17-May-2018
EPH CWG (Aromatic) Filtered GC (W)			15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018		
EPH CWG (Aromatic) GC (S)	16-May-2018	17-May-2018	17-May-2018	17-May-2018	17-May-2018	15-May-2018	17-May-2018	17-May-2018	16-May-2018	16-May-2018
GRO by GC-FID (S)	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018
GRO by GC-FID (W)			15-May-2018	14-May-2018	14-May-2018	12-May-2018	14-May-2018	14-May-2018		
Mercury Dissolved			15-May-2018	16-May-2018	15-May-2018	15-May-2018	15-May-2018	16-May-2018		
Metals in solid samples by OES	14-May-2018	16-May-2018	14-May-2018	15-May-2018	17-May-2018	17-May-2018	17-May-2018	16-May-2018	16-May-2018	11-May-2018
PAH by GCMS	16-May-2018	14-May-2018	16-May-2018	16-May-2018	16-May-2018	15-May-2018	14-May-2018	16-May-2018	16-May-2018	16-May-2018
PAH in waters by GC-MS (diss.filt)			15-May-2018	17-May-2018	17-May-2018	15-May-2018	15-May-2018	15-May-2018		
pH	08-May-2018	15-May-2018	16-May-2018	09-May-2018	16-May-2018	08-May-2018	16-May-2018	16-May-2018	09-May-2018	09-May-2018
pH Value of Filtered Water			11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018		
Phenols by HPLC (S)	15-May-2018	15-May-2018	15-May-2018	16-May-2018	16-May-2018	14-May-2018	15-May-2018	14-May-2018	15-May-2018	15-May-2018
Sample description	06-May-2018	09-May-2018	06-May-2018	06-May-2018	06-May-2018	06-May-2018	06-May-2018	06-May-2018	06-May-2018	06-May-2018
Total Organic Carbon	14-May-2018	15-May-2018	14-May-2018	14-May-2018	14-May-2018	15-May-2018	14-May-2018	14-May-2018	14-May-2018	14-May-2018
Total Sulphate			16-May-2018		16-May-2018		16-May-2018			
Total Sulphur			09-May-2018		14-May-2018		14-May-2018			
TPH CWG Filtered (W)			15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018		
TPH CWG GC (S)	16-May-2018	17-May-2018	17-May-2018	17-May-2018	17-May-2018	15-May-2018	17-May-2018	17-May-2018	16-May-2018	17-May-2018
VOC MS (S)	15-May-2018	16-May-2018	15-May-2018	14-Jun-2018	14-Jun-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018	15-May-2018
VOC MS (W)			11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018	12-May-2018		

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	19 June 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180602-44
Your Reference:	
Location:	Llanwern
Report No:	460673

This report has been revised and directly supersedes 460652 in its entirety.

We received 45 samples on Friday June 01, 2018 and 45 of these samples were scheduled for analysis which was completed on Monday June 18, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17671416	40A-E26		0.50	30/05/2018
17671420	40A-E26		1.50	30/05/2018
17671311	40A-E27		0.50	30/05/2018
17671315	40A-E27		1.00	30/05/2018
17671319	40A-E27		1.50	30/05/2018
17671424	40A-E26-V		2.50	30/05/2018
17671323	40A-E27-V		2.30	30/05/2018
17671430	40A-F26		0.70	30/05/2018
17671435	40A-F26		1.30	30/05/2018
17671439	40A-G26		0.50	30/05/2018
17671328	40A-G27		0.40	30/05/2018
17671332	40A-G27		1.00	30/05/2018
17671337	40A-G27		2.50	30/05/2018
17671345	40A-G27-V		3.30	30/05/2018
17671450	40A-H26		0.50	30/05/2018
17671459	40A-H26		1.20	30/05/2018
17671353	40A-H27		0.50	30/05/2018
17671358	40A-H27		1.00	30/05/2018
17671463	40A-I26		0.50	30/05/2018
17671467	40A-I26		1.20	30/05/2018
17671362	40A-I27		0.70	30/05/2018
17671367	40A-I27		1.50	30/05/2018
17671473	40A-I26-V		2.60	30/05/2018
17671477	40A-J26		1.50	30/05/2018
17671371	40A-J27		0.70	30/05/2018
17671376	40A-J27		1.50	30/05/2018
17671481	40A-J26-V		2.80	30/05/2018
17671380	40A-K27		0.50	30/05/2018
17671384	40A-K27		1.00	30/05/2018
17671388	40A-K27		1.70	30/05/2018
17671299	40A-L28		0.50 - 0.50	29/05/2018
17671349	40A-L28		1.00	29/05/2018
17671397	40A-L28		1.50	29/05/2018
17671455	40A-L28		2.50	29/05/2018
17671485	40A-L28-V		3.00	29/05/2018
17671392	40A-M27		1.00 - 1.00	30/05/2018
17671491	40A-M28		0.50	29/05/2018
17671495	40A-M28		1.00	29/05/2018
17671499	40A-M28		2.00	29/05/2018
17671402	40A-M27-V		1.80	30/05/2018
17671503	40A-N28		0.50	29/05/2018
17671303	40A-N28		1.00	29/05/2018
17671307	40A-N28-V		1.20	29/05/2018
17671406	40A-O28		0.70	30/05/2018
17671411	40A-O28-V		1.00	30/05/2018

Maximum Sample/Coolbox Temperature (°C) : **16.4**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																		
			17671416			17671420			17671311			17671315			17671319			17671424		17671323	
			Customer Sample Reference																		
			40A-E26			40A-E26			40A-E27			40A-E27			40A-E27			40A-E26-V		40A-E27-V	
			AGS Reference																		
			Depth (m)			0.50			1.50			0.50			1.00			1.50		2.50		2.30	
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 21					X			X							X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 36	X			X			X			X			X							
Ammonium Soil by Titration	All	NDPs: 0 Tests: 45		X			X			X			X			X			X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 21					X			X							X					
Asbestos fibres in Soil*	All	NDPs: 0 Tests: 25				X			X						X							
Asbestos Quantification - Full*	All	NDPs: 0 Tests: 9				X																
CEN Readings	All	NDPs: 1 Tests: 36	X			X			X			X			X							
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 81	X	X		X	X		X	X		X	X		X	X		X		X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 36	X			X			X			X			X							
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 36	X			X			X			X			X							
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 45		X			X			X			X			X			X		X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 36	X			X			X			X			X							
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 45		X			X			X			X			X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 45			X			X			X			X			X		X		X	X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 36	X			X			X			X			X							

17671450	40A-H26		0.50	1kg TUB	S			x						x	x	x	x			x					x
17671345	40A-G27-V		3.30	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x						x					x					
17671337	40A-G27		2.50	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x						x					x					
				1kg TUB	S			x						x	x	x	x			x					x
17671332	40A-G27		1.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S	x			x	x					x					x						
				1kg TUB	S			x				x		x	x	x	x			x					x
17671328	40A-G27		0.40	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x						x					x					
				1kg TUB	S			x				x		x	x	x	x			x					x
17671439	40A-G26		0.50	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S	x			x	x					x					x						
				1kg TUB	S			x				x		x	x	x	x			x					x
17671435	40A-F26		1.30	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S	x			x	x					x					x						
				1kg TUB	S			x				x	x	x	x	x	x			x					x
17671430	40A-F26		0.70	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x						x					x					
				1kg TUB	S			x						x	x	x	x			x					x

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17671416			17671420			17671311			17671315			17671319			17671424		17671323	
Customer Sample Reference			40A-E26			40A-E26			40A-E27			40A-E27			40A-E27			40A-E26-V		40A-E27-V	
AGS Reference																					
Depth (m)			0.50			1.50			0.50			1.00			1.50			2.50		2.30	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 36	X			X			X			X			X						
Metals in solid samples by OES	All	NDPs: 0 Tests: 45		X			X			X			X			X		X		X	
PAH by GCMS	All	NDPs: 0 Tests: 45		X			X			X			X			X		X		X	
PAH Spec MS - Aqueous (W)	All	NDPs: 1 Tests: 35	X			X			X			X			X						
pH	All	NDPs: 0 Tests: 45		X			X			X			X			X		X		X	
pH Value	All	NDPs: 0 Tests: 36	X			X			X			X			X						
Phenols by HPLC (S)	All	NDPs: 0 Tests: 45		X			X			X			X			X		X		X	
Sample description	All	NDPs: 0 Tests: 45		X			X			X			X			X		X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 45		X			X			X			X			X		X		X	
Total Sulphate	All	NDPs: 0 Tests: 21					X			X						X					
Total Sulphur	All	NDPs: 0 Tests: 21					X			X						X					
TPH CWG (W)	All	NDPs: 0 Tests: 36	X			X			X			X			X						
TPH CWG GC (S)	All	NDPs: 0 Tests: 45		X			X			X			X			X		X		X	
VOC MS (S)	All	NDPs: 0 Tests: 45			X			X			X			X			X		X		X

17671450	40A-H26		0.50	1kg TUB	S	x			x		x						x					
17671345	40A-G27-V		3.30	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x		
17671337	40A-G27		2.50	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x		
				1kg TUB	S	x			x		x						x					
17671332	40A-G27		1.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x			x		x						x					
17671328	40A-G27		0.40	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x		
				1kg TUB	S	x			x		x						x					
17671439	40A-G26		0.50	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x			x		x						x					
17671435	40A-F26		1.30	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x			x		x						x					
17671430	40A-F26		0.70	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x		
				1kg TUB	S	x			x		x						x					

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17671450		17671459			17671353			17671358			17671463			17671467			17671362
Customer Sample Reference			40A-H26		40A-H26			40A-H27			40A-H27			40A-I26			40A-I26			40A-I27
AGS Reference																				
Depth (m)			0.50		1.20			0.50			1.00			0.50			1.20			0.70
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 21				X			X									X			X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 36			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 45	X			X			X			X			X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 21				X			X									X			X
Asbestos fibres in Soil*	All	NDPs: 0 Tests: 25			X			X									X			X	
Asbestos Quantification - Full*	All	NDPs: 0 Tests: 9			X			X									X				
CEN Readings	All	NDPs: 1 Tests: 36			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 81	X		X	X		X	X		X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 36			X			X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 36			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 45	X			X			X			X			X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 36			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 45	X			X			X			X			X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 45		X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 36			X			X			X			X			X			X	

17671384	40A-K27		1.00	1kg TUB	S		X					X	X	X	X		X			X
17671380	40A-K27		0.50	60g VOC (ALE215)	S															X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X			
				1kg TUB	S		X			X		X	X	X	X		X				X
17671481	40A-J26-V		2.80	60g VOC (ALE215)	S															X	
				250g Amber Jar (ALE210)	S			X					X			X		X			
17671376	40A-J27		1.50	60g VOC (ALE215)	S															X	
				250g Amber Jar (ALE210)	S			X					X			X		X			
				1kg TUB	S		X			X	X	X	X	X	X		X				X
17671371	40A-J27		0.70	60g VOC (ALE215)	S															X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X			
				1kg TUB	S		X			X	X	X	X	X	X		X				X
17671477	40A-J26		1.50	60g VOC (ALE215)	S															X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X			
				1kg TUB	S		X			X		X	X	X	X		X				X
17671473	40A-I26-V		2.60	60g VOC (ALE215)	S															X	
				250g Amber Jar (ALE210)	S			X					X			X		X			
17671367	40A-I27		1.50	60g VOC (ALE215)	S															X	
				250g Amber Jar (ALE210)	S			X					X			X		X			
				1kg TUB	S		X					X	X	X	X		X				X
17671362	40A-I27		0.70	60g VOC (ALE215)	S															X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17671450		17671459			17671353			17671358			17671463			17671467			17671362
Customer Sample Reference			40A-H26		40A-H26			40A-H27			40A-H27			40A-I26			40A-I26			40A-I27
AGS Reference																				
Depth (m)			0.50		1.20			0.50			1.00			0.50			1.20			0.70
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 36			X			X			X			X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 45	X			X			X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 45	X			X			X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 1 Tests: 35			X			X			X			X			X			X	
pH	All	NDPs: 0 Tests: 45	X			X			X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 36			X			X			X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 45	X			X			X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 45	X			X			X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 45	X			X			X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 21				X			X									X			X
Total Sulphur	All	NDPs: 0 Tests: 21				X			X									X			X
TPH CWG (W)	All	NDPs: 0 Tests: 36			X			X			X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 45	X			X			X			X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 45		X			X			X			X			X			X		

17671384	40A-K27		1.00	1kg TUB	S	x			x		x						x		
17671380	40A-K27		0.50	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x	
				1kg TUB	S	x			x		x						x		
17671481	40A-J26-V		2.80	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
17671376	40A-J27		1.50	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
				1kg TUB	S	x			x		x						x		
17671371	40A-J27		0.70	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x	
				1kg TUB	S	x			x		x						x		
17671477	40A-J26		1.50	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x	
				1kg TUB	S	x			x		x						x		
17671473	40A-I26-V		2.60	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
17671367	40A-I27		1.50	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
				1kg TUB	S	x			x		x						x		
17671362	40A-I27		0.70	60g VOC (ALE215)	S														x

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			17671384	40A-K27		1.00	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17671388	40A-K27		1.70	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17671299	40A-L28		0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17671349	40A-L28		1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17671397	40A-L28		1.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
							60ml red top tub	S
			17671455	40A-L28		2.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17671485	40A-L28-V		3.00	250g Amber Jar (ALE210)	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 21						
				X				
				X				
				X				
				X				
				X				

17671303	40A-N28		1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X				
				1kg TUB	S		X			X		X	X	X	X		X				X
17671503	40A-N28		0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X			X		X				
				1kg TUB	S		X					X	X	X	X		X				X
17671402	40A-M27-V		1.80	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X			X		X				
17671499	40A-M28		2.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X				
				1kg TUB	S		X			X	X	X	X	X	X		X				X
17671495	40A-M28		1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X			X		X				
				1kg TUB	S		X			X		X	X	X	X		X				X
17671491	40A-M28		0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X				
				1kg TUB	S		X			X		X	X	X	X		X				X
17671392	40A-M27		1.00 - 1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X				
				1kg TUB	S		X			X		X	X	X	X		X				X
17671485	40A-L28-V		3.00	60g VOC (ALE215)	S																	X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17671384		17671388			17671299			17671349			17671397				17671455			17671485
Customer Sample Reference			40A-K27		40A-K27			40A-L28			40A-L28			40A-L28				40A-L28			40A-L28-V
AGS Reference																					
Depth (m)			1.00		1.70			0.50 - 0.50			1.00			1.50				2.50			3.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	60ml red top tub	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 36			X			X			X			X				X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 45	X			X			X			X			X					X		X
PAH by GCMS	All	NDPs: 0 Tests: 45	X			X			X			X			X					X		X
PAH Spec MS - Aqueous (W)	All	NDPs: 1 Tests: 35			X			X			X						N		X			
pH	All	NDPs: 0 Tests: 45	X			X			X			X			X					X		X
pH Value	All	NDPs: 0 Tests: 36			X			X			X			X					X			
Phenols by HPLC (S)	All	NDPs: 0 Tests: 45	X			X			X			X			X					X		X
Sample description	All	NDPs: 0 Tests: 45	X			X			X			X			X					X		X
Total Organic Carbon	All	NDPs: 0 Tests: 45	X			X			X			X			X					X		X
Total Sulphate	All	NDPs: 0 Tests: 21				X			X						X							
Total Sulphur	All	NDPs: 0 Tests: 21				X			X						X							
TPH CWG (W)	All	NDPs: 0 Tests: 36			X			X			X			X				X			
TPH CWG GC (S)	All	NDPs: 0 Tests: 45	X			X			X			X			X					X		X
VOC MS (S)	All	NDPs: 0 Tests: 45		X			X			X			X			X					X	

17671303	40A-N28		1.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X		
				1kg TUB	S	X			X		X							X			
17671503	40A-N28		0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X		
				1kg TUB	S	X			X		X							X			
17671402	40A-M27-V		1.80	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X		
17671499	40A-M28		2.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X		
				1kg TUB	S	X			X		X							X			
17671495	40A-M28		1.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X		
				1kg TUB	S	X			X		X							X			
17671491	40A-M28		0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X		
				1kg TUB	S	X			X		X							X			
17671392	40A-M27		1.00 - 1.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X		
				1kg TUB	S	X			X		X							X			
17671485	40A-L28-V		3.00	60g VOC (ALE215)	S																X

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | | |

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17671416	40A-E26	0.50	Dark Brown	Sandy Silt Loam	Stones	None
17671420	40A-E26	1.50	Dark Brown	Loamy Sand	Stones	Vegetation
17671311	40A-E27	0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17671315	40A-E27	1.00	Dark Brown	Silt Loam	Stones	None
17671319	40A-E27	1.50	Dark Brown	Silt Loam	Stones	None
17671424	40A-E26-V	2.50	Dark Brown	Sandy Clay	Stones	Vegetation
17671323	40A-E27-V	2.30	Dark Brown	Sandy Clay Loam	Stones	None
17671430	40A-F26	0.70	Dark Brown	Sand	Stones	Vegetation
17671435	40A-F26	1.30	Black	Sandy Loam	Stones	None
17671439	40A-G26	0.50	Grey	Loamy Sand	Stones	None
17671328	40A-G27	0.40	Dark Brown	Sandy Clay	Crushed Brick	Stones
17671332	40A-G27	1.00	Dark Brown	Sand	Stones	None
17671337	40A-G27	2.50	Dark Brown	Sandy Clay	Stones	None
17671345	40A-G27-V	3.30	Dark Brown	Sandy Clay Loam	Vegetation	Stones
17671450	40A-H26	0.50	Dark Brown	Sand	Stones	None
17671459	40A-H26	1.20	Black	Loamy Sand	Stones	Brick
17671353	40A-H27	0.50	Dark Brown	Sandy Clay	Crushed Brick	Stones
17671358	40A-H27	1.00	Dark Brown	Sand	Stones	None
17671463	40A-I26	0.50	Dark Brown	Sand	Stones	None
17671467	40A-I26	1.20	Dark Brown	Stone/Soil	Stones	Crushed Brick
17671362	40A-I27	0.70	Dark Brown	Sandy Clay	Crushed Brick	Stones
17671367	40A-I27	1.50	Dark Brown	Sandy Clay	Stones	None
17671473	40A-I26-V	2.60	Dark Brown	Sandy Clay Loam	Vegetation	None
17671477	40A-J26	1.50	Dark Brown	Sand	Crushed Brick	Stones
17671371	40A-J27	0.70	Dark Brown	Sandy Clay	Crushed Brick	Stones
17671376	40A-J27	1.50	Grey	Sandy Clay	Crushed Brick	Stones
17671481	40A-J26-V	2.80	Grey	Silty Clay	None	None
17671380	40A-K27	0.50	Dark Brown	Sand	Fibres	N/A
17671384	40A-K27	1.00	Black	Silty Sand	Stones	None
17671388	40A-K27	1.70	Dark Brown	Sandy Clay	Crushed Brick	Stones
17671299	40A-L28	0.50 - 0.50	Dark Brown	Sand	Crushed Brick	Stones
17671349	40A-L28	1.00	Dark Brown	Sandy Clay	Crushed Brick	Stones
17671397	40A-L28	1.50	Black	Sand	Stones	None
17671455	40A-L28	2.50	Black	Clay Loam	Stones	None
17671485	40A-L28-V	3.00	Dark Brown	Sandy Clay Loam	Vegetation	None
17671392	40A-M27	1.00 - 1.00	Dark Brown	Loamy Sand	Crushed Brick	Stones
17671491	40A-M28	0.50	Dark Brown	Sandy Loam	Stones	None
17671495	40A-M28	1.00	Dark Brown	Sandy Loam	Crushed Brick	Stones

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

			Colour	Description	Inclusions	Inclusions 2
17671499	40A-M28	2.00	Dark Brown	Sandy Clay Loam	Crushed Brick	Stones
17671402	40A-M27-V	1.80	Dark Brown	Sandy Clay Loam	Vegetation	None
17671303	40A-N28	1.00	Dark Brown	Clay	Stones	Brick
17671503	40A-N28	0.50	Black	Loamy Sand	Stones	Vegetation
17671307	40A-N28-V	1.20	Dark Brown	Sandy Clay Loam	Vegetation	None
17671406	40A-O28	0.70	Dark Brown	Loamy Sand	Crushed Brick	Stones
17671411	40A-O28-V	1.00	Dark Brown	Sandy Clay	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-E26	40A-E26	40A-E27	40A-E27	40A-E27	40A-E26-V
			Depth (m)	0.50	1.50	0.50	1.00	1.50	2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671416	17671420	17671311	17671315	17671319	17671424
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.5	11	11	11	9.1	18
Actinolite*		SUB (ASB)			Not Detected #	Not Detected #		Not Detected #	
Asbestos Quantification - Gravimetric - %*	<0.001 %	SUB (ASB)			<0.001 #				
Amosite*		SUB (ASB)			Not Detected #	Not Detected #		Not Detected #	
Asbestos Quantification - PCOM Evaluation - %*	<0.001 %	SUB (ASB)			<0.001 #				
Anthophyllite*		SUB (ASB)			Not Detected #	Not Detected #		Not Detected #	
Asbestos Quantification - Total - %*	<0.001 %	SUB (ASB)			<0.001 #				
Chrysotile*		SUB (ASB)			Detected #	Not Detected #		Not Detected #	
Crocidolite*		SUB (ASB)			Not Detected #	Not Detected #		Not Detected #	
Tremolite*		SUB (ASB)			Not Detected #	Not Detected #		Not Detected #	
Non-Asbestos Fibres Detected		SUB (ASB)			Not Detected #	Not Detected #		Not Detected #	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	17.3 M	<12 M	<12 M	<12 M	219 M
Phenol	<0.01 mg/kg	TM062 (S)		0.088 M	0.0113 M	0.0112 M	0.179 M	0.011 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0112 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.088 M	<0.035 M	<0.035 M	0.19 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.329	0.236		0.326	
Sulphate, Total potential	<0.06 %	TM132			0.987	0.708		0.978	
Soil Organic Matter (SOM)	<0.35 %	TM132		2.97 #	3.59 #	4.47 #	3.33 #	4.6 #	0.965 #
pH	1 pH Units	TM133		11.5 M	10.8 M	11.2 M	11.4 M	11.2 M	8.74 M
Cyanide, Total	<1 mg/kg	TM153		1.08 M	2.08 M	4.2 M	1.06 M	9.78 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.65 M	7.84 M	7.41 M	8.01 M	10.4 M	10.3 M
Cadmium	<0.02 mg/kg	TM181		1.09 M	2.26 M	1.49 M	1.02 M	0.988 M	0.208 M
Chromium	<0.9 mg/kg	TM181		323 M	281 M	176 M	250 M	61.8 M	26.6 M
Copper	<1.4 mg/kg	TM181		25.5 M	27.2 M	18.7 M	52 M	25.7 M	10.5 M
Iron	<1000 mg/kg	TM181		106000 #	107000 #	111000 #	113000 #	75000 #	30300 #
Lead	<0.7 mg/kg	TM181		63.5 M	265 M	217 M	86.7 M	93.6 M	28.8 M
Manganese	<0.13 mg/kg	TM181		21700 M	15300 M	15300 M	20000 M	9610 M	1660 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		9.42 M	19.6 M	11.1 M	14.4 M	16.6 M	27.3 M
Selenium	<1 mg/kg	TM181		7.33 #	<10 #	5.77 #	6.77 #	4.28 #	<1 #
Vanadium	<0.2 mg/kg	TM181		318 #	303 #	279 #	333 #	133 #	52.2 #
Zinc	<1.9 mg/kg	TM181		256 M	640 M	784 M	201 M	313 M	105 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-E26	40A-E26	40A-E27	40A-E27	40A-E27	40A-E26-V
			Depth (m)	0.50	1.50	0.50	1.00	1.50	2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671416	17671420	17671311	17671315	17671319	17671424
			AGS Reference						
Sulphate, acid soluble (total)	<0.02 %	TM221		0.474	0.339		0.457	
Calcium	<21 mg/kg	TM224		159000	174000		118000	
Magnesium	<8 mg/kg	TM224		17900	29800		19300	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.573 M	0.184 M		0.269 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			40A-E27-V	2.30	Soil/Solid (S)	30/05/2018	00:00	01/06/2018	180602-44	17671323	
			40A-F26	0.70	Soil/Solid (S)	30/05/2018	00:00	01/06/2018	180602-44	17671430	
			40A-F26	1.30	Soil/Solid (S)	30/05/2018	00:00	01/06/2018	180602-44	17671435	
			40A-G26	0.50	Soil/Solid (S)	30/05/2018	00:00	01/06/2018	180602-44	17671439	
			40A-G27	0.40	Soil/Solid (S)	30/05/2018	00:00	01/06/2018	180602-44	17671328	
			40A-G27	1.00	Soil/Solid (S)	30/05/2018	00:00	01/06/2018	180602-44	17671332	
Moisture Content Ratio (% of as received sample)	%	PM024	25	7.9	9.7	6.6	8.6	6.6			
Actinolite*		SUB (ASB)			Not Detected #	Not Detected #	Not Detected #	Not Detected #			
Asbestos Quantification - Gravimetric - %*	<0.001 %	SUB (ASB)			<0.001 #						
Amosite*		SUB (ASB)			Not Detected #	Not Detected #	Not Detected #	Not Detected #			
Asbestos Quantification - PCOM Evaluation - %*	<0.001 %	SUB (ASB)			<0.001 #						
Anthophyllite*		SUB (ASB)			Not Detected #	Not Detected #	Not Detected #	Not Detected #			
Asbestos Quantification - Total - %*	<0.001 %	SUB (ASB)			<0.001 #						
Chrysotile*		SUB (ASB)			Detected #	Not Detected #	Not Detected #	Not Detected #			
Crocidolite*		SUB (ASB)			Not Detected #	Not Detected #	Not Detected #	Not Detected #			
Tremolite*		SUB (ASB)			Not Detected #	Not Detected #	Not Detected #	Not Detected #			
Non-Asbestos Fibres Detected		SUB (ASB)			Not Detected #	Not Detected #	Not Detected #	Not Detected #			
Exchangeable Ammonia as N	<12 mg/kg	TM024	88.6 M	<12 M	<12 M	<12 M	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M	0.0107 M	<0.01 M	<0.01 M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M			
Sulphur, Total	<0.02 %	TM132			0.201	0.408		0.599			
Sulphate, Total potential	<0.06 %	TM132			0.603	1.22		1.8			
Soil Organic Matter (SOM)	<0.35 %	TM132	1.32 #	2.69 #	19.1 #	1.67 #	4.67 #	0.821 #			
pH	1 pH Units	TM133	8.4 M	9.5 M	11.1 M	12.4 M	10.4 M	11.6 M			
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M	8.85 M	<1 M			
Arsenic	<0.6 mg/kg	TM181	14.3 M	1.79 M	11.5 M	4.15 M	6.61 M	<0.6 M			
Cadmium	<0.02 mg/kg	TM181	0.298 M	0.199 M	1.22 M	0.371 M	1.25 M	0.0516 M			
Chromium	<0.9 mg/kg	TM181	39.1 M	16.4 M	43 M	259 M	77.3 M	29.4 M			
Copper	<1.4 mg/kg	TM181	12.1 M	6.1 M	23.9 M	9.65 M	42.9 M	<1.4 M			
Iron	<1000 mg/kg	TM181	44100 #	28600 #	243000 #	88100 #	53700 #	9440 #			
Lead	<0.7 mg/kg	TM181	31.7 M	12.9 M	131 M	23.2 M	118 M	<0.7 M			
Manganese	<0.13 mg/kg	TM181	1540 M	5250 M	14300 M	32800 M	5360 M	3950 M			
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M			
Nickel	<0.2 mg/kg	TM181	35.3 M	4.35 M	13.4 M	5.74 M	16.1 M	0.986 M			
Selenium	<1 mg/kg	TM181	1.15 #	4.84 #	4.16 #	11.4 #	3.39 #	2.75 #			
Vanadium	<0.2 mg/kg	TM181	72.9 #	64.7 #	275 #	1560 #	106 #	29.6 #			
Zinc	<1.9 mg/kg	TM181	132 M	84.8 M	285 M	71.4 M	499 M	38.9 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-E27-V	40A-F26	40A-F26	40A-G26	40A-G27	40A-G27
			Depth (m)	2.30	0.70	1.30	0.50	0.40	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671323	17671430	17671435	17671439	17671328	17671332
			AGS Reference						
Sulphate, acid soluble (total)	<0.02 %	TM221				0.344	0.498		2.39
Calcium	<21 mg/kg	TM224				101000	257000		207000
Magnesium	<8 mg/kg	TM224				9670	20100		27900
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.225 M	0.0345 M		0.112 M

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G27	40A-G27-V	40A-H26	40A-H26	40A-H27	40A-H27
			Depth (m)	2.50	3.30	0.50	1.20	0.50	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671337	17671345	17671450	17671459	17671353	17671358
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	24	5.2	18	9.5	10
Actinolite*		SUB (ASB)					Not Detected #	Not Detected #	
Asbestos Quantification - Gravimetric - %*	<0.001 %	SUB (ASB)					<0.001 #	<0.001 #	
Amosite*		SUB (ASB)					Detected #	Detected #	
Asbestos Quantification - PCOM Evaluation - %*	<0.001 %	SUB (ASB)					<0.001 #	<0.001 #	
Anthophyllite*		SUB (ASB)					Not Detected #	Not Detected #	
Asbestos Quantification - Total - %*	<0.001 %	SUB (ASB)					<0.001 #	<0.001 #	
Chrysotile*		SUB (ASB)					Not Detected #	Not Detected #	
Crocidolite*		SUB (ASB)					Not Detected #	Not Detected #	
Tremolite*		SUB (ASB)					Not Detected #	Not Detected #	
Non-Asbestos Fibres Detected		SUB (ASB)					Not Detected #	Not Detected #	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	267 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132					0.317	0.438	
Sulphate, Total potential	<0.06 %	TM132					0.951	1.31	
Soil Organic Matter (SOM)	<0.35 %	TM132		11.7 #	2.98 #	1.76 #	49.7 #	3.59 #	4.64 #
pH	1 pH Units	TM133		10.1 M	7.83 M	10.4 M	11.1 M	10.2 M	11.1 M
Cyanide, Total	<1 mg/kg	TM153		12.5 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.45 M	12.8 M	4 M	6.32 M	6.56 M	4.87 M
Cadmium	<0.02 mg/kg	TM181		3.09 M	0.399 M	1.2 M	0.441 M	0.869 M	0.706 M
Chromium	<0.9 mg/kg	TM181		6.84 M	32 M	197 M	101 M	49.6 M	40.5 M
Copper	<1.4 mg/kg	TM181		15.8 M	16.8 M	19.9 M	26.2 M	18 M	11.7 M
Iron	<1000 mg/kg	TM181		52900 #	35300 #	115000 #	72900 #	62300 #	48300 #
Lead	<0.7 mg/kg	TM181		354 M	26.4 M	77.9 M	52.3 M	85.8 M	56.4 M
Manganese	<0.13 mg/kg	TM181		2530 M	1280 M	15800 M	13500 M	6790 M	4670 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		10.3 M	31.7 M	11.3 M	16.1 M	13.8 M	8.93 M
Selenium	<1 mg/kg	TM181		2.02 #	1.15 #	6.65 #	5.26 #	3.65 #	2.85 #
Vanadium	<0.2 mg/kg	TM181		39.7 #	51.1 #	207 #	157 #	96.2 #	57 #
Zinc	<1.9 mg/kg	TM181		1730 M	132 M	209 M	84.9 M	343 M	310 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G27	40A-G27-V	40A-H26	40A-H26	40A-H27	40A-H27
			Depth (m)	2.50	3.30	0.50	1.20	0.50	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671337	17671345	17671450	17671459	17671353	17671358
			AGS Reference						
Sulphate, acid soluble (total)	<0.02 %	TM221					0.306	0.517	
Calcium	<21 mg/kg	TM224					118000	152000	
Magnesium	<8 mg/kg	TM224					9720	23300	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243					0.126 M	0.343 M	

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-I26	40A-I26	40A-I27	40A-I27	40A-I26-V	40A-J26
			Depth (m)	0.50	1.20	0.70	1.50	2.60	1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671463	17671467	17671362	17671367	17671473	17671477
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.5	12	9.6	11	38	6.8
Actinolite*		SUB (ASB)			Not Detected #	Not Detected #			Not Detected #
Asbestos Quantification - Gravimetric - %*	<0.001 %	SUB (ASB)			0.002 #				
Amosite*		SUB (ASB)			Not Detected #	Not Detected #			Not Detected #
Asbestos Quantification - PCOM Evaluation - %*	<0.001 %	SUB (ASB)			<0.001 #				
Anthophyllite*		SUB (ASB)			Not Detected #	Not Detected #			Not Detected #
Asbestos Quantification - Total - %*	<0.001 %	SUB (ASB)			0.002 #				
Chrysotile*		SUB (ASB)			Detected #	Not Detected #			Not Detected #
Crocidolite*		SUB (ASB)			Not Detected #	Not Detected #			Not Detected #
Tremolite*		SUB (ASB)			Not Detected #	Not Detected #			Not Detected #
Non-Asbestos Fibres Detected		SUB (ASB)			Not Detected #	Not Detected #			Not Detected #
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	163 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.0486 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.164	0.257			0.106
Sulphate, Total potential	<0.06 %	TM132			0.492	0.771			0.318
Soil Organic Matter (SOM)	<0.35 %	TM132		4.17 #	7.24 #	6.33 #	4.91 #	6.86 #	1.71 #
pH	1 pH Units	TM133		11.7 M	9.2 #	11.2 M	11.4 M	7.6 M	9.14 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	1.07 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.3 M	7.03 M	8.11 M	5.46 M	12.8 M	5.18 M
Cadmium	<0.02 mg/kg	TM181		0.658 M	0.276 M	0.887 M	0.812 M	0.65 M	0.187 M
Chromium	<0.9 mg/kg	TM181		85.1 M	119 M	68.2 M	79.4 M	42.5 M	12.9 M
Copper	<1.4 mg/kg	TM181		22.8 M	24.1 M	23.7 M	16.5 M	28.8 M	19.5 M
Iron	<1000 mg/kg	TM181		58200 #	27900 #	83600 #	93000 #	24100 #	13700 #
Lead	<0.7 mg/kg	TM181		59.7 M	21.2 M	121 M	66.6 M	41.6 M	25.3 M
Manganese	<0.13 mg/kg	TM181		8750 M	6080 M	8240 M	8230 M	628 M	1170 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		18 M	19.8 M	15.6 M	10.4 M	28.5 M	16.7 M
Selenium	<1 mg/kg	TM181		4.74 #	4.09 #	3.55 #	3.24 #	1.37 #	1.21 #
Vanadium	<0.2 mg/kg	TM181		165 #	88.1 #	107 #	111 #	54.1 #	21.7 #
Zinc	<1.9 mg/kg	TM181		260 M	67.3 M	305 M	204 M	148 M	80.7 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-I26	40A-I26	40A-I27	40A-I27	40A-I26-V	40A-J26
			Depth (m)	0.50	1.20	0.70	1.50	2.60	1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671463	17671467	17671362	17671367	17671473	17671477
			AGS Reference						
Sulphate, acid soluble (total)	<0.02 %	TM221			0.171	0.338			0.218
Calcium	<21 mg/kg	TM224			73100	130000			48500
Magnesium	<8 mg/kg	TM224			8220	19200			8760
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0455 M	0.235 M			0.076 M

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-J27	40A-J27	40A-J26-V	40A-K27	40A-K27	40A-K27
			Depth (m)	0.70	1.50	2.80	0.50	1.00	1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671371	17671376	17671481	17671380	17671384	17671388
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.3	7.4	24	5.3	13	8.5
Actinolite*		SUB (ASB)		Not Detected #	Not Detected #		Not Detected #		Not Detected #
Asbestos Quantification - Gravimetric - %*	<0.001 %	SUB (ASB)		<0.001 #	<0.001 #				
Amosite*		SUB (ASB)		Detected #	Detected #		Not Detected #		Not Detected #
Asbestos Quantification - PCOM Evaluation - %*	<0.001 %	SUB (ASB)		<0.001 #	<0.001 #				
Anthophyllite*		SUB (ASB)		Not Detected #	Not Detected #		Not Detected #		Not Detected #
Asbestos Quantification - Total - %*	<0.001 %	SUB (ASB)		<0.001 #	<0.001 #				
Chrysotile*		SUB (ASB)		Not Detected #	Not Detected #		Not Detected #		Not Detected #
Crocidolite*		SUB (ASB)		Not Detected #	Not Detected #		Not Detected #		Not Detected #
Tremolite*		SUB (ASB)		Not Detected #	Not Detected #		Not Detected #		Not Detected #
Non-Asbestos Fibres Detected		SUB (ASB)		Not Detected #	Not Detected #		Not Detected #		Not Detected #
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	79.9 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.369			0.135		0.185
Sulphate, Total potential	<0.06 %	TM132		1.11			0.405		0.555
Soil Organic Matter (SOM)	<0.35 %	TM132		3.9 #	1.81 #	1.18 #	0.45 #	54 #	12.1 #
pH	1 pH Units	TM133		10.1 M	11.2 M	7.61 M	12.7 M	8.55 M	9.07 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	4.58 M	<1 M	5.01 M	2.71 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.98 M	6.22 M	10.4 M	1.35 M	7.81 M	6.75 M
Cadmium	<0.02 mg/kg	TM181		0.805 M	1.74 M	0.187 M	0.542 M	3.37 M	0.7 M
Chromium	<0.9 mg/kg	TM181		138 M	144 M	28.2 M	397 M	<0.9 M	72.1 M
Copper	<1.4 mg/kg	TM181		53.6 M	16.6 M	12 M	<1.4 M	19.3 M	14.8 M
Iron	<1000 mg/kg	TM181		59100 #	83500 #	35700 #	151000 #	239000 #	50700 #
Lead	<0.7 mg/kg	TM181		56.2 M	115 M	25 M	11.9 M	138 M	57.8 M
Manganese	<0.13 mg/kg	TM181		8110 M	9720 M	379 M	28300 M	3230 M	5520 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	1.38 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		13.1 M	14 M	37.6 M	1.04 M	43.4 M	15.9 M
Selenium	<1 mg/kg	TM181		3.94 #	4.21 #	<1 #	7.99 #	<1 #	2.49 #
Vanadium	<0.2 mg/kg	TM181		161 #	133 #	50.1 #	274 #	16.8 #	59.6 #
Zinc	<1.9 mg/kg	TM181		258 M	613 M	105 M	34.9 M	727 M	207 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-J27	40A-J27	40A-J26-V	40A-K27	40A-K27	40A-K27
			Depth (m)	0.70	1.50	2.80	0.50	1.00	1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671371	17671376	17671481	17671380	17671384	17671388
			AGS Reference						
Sulphate, acid soluble (total)	<0.02 %	TM221		0.473			0.223		0.164
Calcium	<21 mg/kg	TM224		128000			259000		92500
Magnesium	<8 mg/kg	TM224		17500			41500		16800
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.977 M			0.0045 M		0.155 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L28	40A-L28	40A-L28	40A-L28	40A-L28-V	40A-M27
			Depth (m)	0.50 - 0.50	1.00	1.50	2.50	3.00	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/05/2018	29/05/2018	29/05/2018	29/05/2018	29/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671299	17671349	17671397	17671455	17671485	17671392
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7	6.8	17	7.6	29	4.9
Actinolite*		SUB (ASB)		Not Detected #	Not Detected #	Not Detected #			Not Detected #
Amosite*		SUB (ASB)		Not Detected #	Not Detected #	Not Detected #			Not Detected #
Anthophyllite*		SUB (ASB)		Not Detected #	Not Detected #	Not Detected #			Not Detected #
Chrysotile*		SUB (ASB)		Not Detected #	Not Detected #	Not Detected #			Not Detected #
Crocidolite*		SUB (ASB)		Not Detected #	Not Detected #	Not Detected #			Not Detected #
Tremolite*		SUB (ASB)		Not Detected #	Not Detected #	Not Detected #			Not Detected #
Non-Asbestos Fibres Detected		SUB (ASB)		Not Detected #	Not Detected #	Not Detected #			Not Detected #
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	208 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.389		0.77			0.273
Sulphate, Total potential	<0.06 %	TM132		1.17		2.31			0.819
Soil Organic Matter (SOM)	<0.35 %	TM132		1.98 #	4.72 #	>100 #	21.7 #	4.1 #	18.4 #
pH	1 pH Units	TM133		11.1 M	10.9 M	10.9 M	11.7 M	7.59 M	8.41 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.82 M	3.88 M	4.22 M	5.98 M	10.3 M	7.67 M
Cadmium	<0.02 mg/kg	TM181		0.664 M	0.561 M	0.227 M	0.509 M	0.278 M	0.389 M
Chromium	<0.9 mg/kg	TM181		180 M	81.2 M	21.8 M	291 M	35.4 M	12.1 M
Copper	<1.4 mg/kg	TM181		16.8 M	10.2 M	63 M	21.7 M	17 M	28 M
Iron	<1000 mg/kg	TM181		85800 #	48400 #	19000 #	116000 #	32700 #	50000 #
Lead	<0.7 mg/kg	TM181		25 M	15.6 M	20.4 M	23.9 M	24.3 M	31.2 M
Manganese	<0.13 mg/kg	TM181		12500 M	6410 M	1190 M	21700 M	374 M	2160 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		8.62 M	7.24 M	8.01 M	15.2 M	29.6 M	18.3 M
Selenium	<1 mg/kg	TM181		5.08 #	3.59 #	1.5 #	7.48 #	<1 #	1.76 #
Vanadium	<0.2 mg/kg	TM181		301 #	172 #	38.1 #	714 #	55.5 #	75.6 #
Zinc	<1.9 mg/kg	TM181		80.1 M	73.6 M	35 M	76.7 M	103 M	140 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.578		0.643			0.505
Calcium	<21 mg/kg	TM224		205000		26600			69400
Magnesium	<8 mg/kg	TM224		16700		1760			10500

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			40A-L28	0.50 - 0.50	Soil/Solid (S)	29/05/2018	00:00	01/06/2018	180602-44	17671299	
			40A-L28	1.00	Soil/Solid (S)	29/05/2018	00:00	01/06/2018	180602-44	17671349	
			40A-L28	1.50	Soil/Solid (S)	29/05/2018	00:00	01/06/2018	180602-44	17671397	
			40A-L28	2.50	Soil/Solid (S)	29/05/2018	00:00	01/06/2018	180602-44	17671455	
			40A-L28-V	3.00	Soil/Solid (S)	29/05/2018	00:00	01/06/2018	180602-44	17671485	
			40A-M27	1.00 - 1.00	Soil/Solid (S)	30/05/2018	00:00	01/06/2018	180602-44	17671392	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243	0.247 M								0.0868 M

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-M28	40A-M28	40A-M28	40A-M27-V	40A-N28	40A-N28
			Depth (m)	0.50	1.00	2.00	1.80	0.50	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/05/2018	29/05/2018	29/05/2018	30/05/2018	29/05/2018	29/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671491	17671495	17671499	17671402	17671503	17671303
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5.9	2.5	15	51	9.5	8.7
Actinolite*		SUB (ASB)		Not Detected #	Not Detected #	Not Detected #			Not Detected #
Asbestos Quantification - Gravimetric - %*	<0.001 %	SUB (ASB)				0.001 #			
Amosite*		SUB (ASB)		Not Detected #	Not Detected #	Detected #			Not Detected #
Asbestos Quantification - PCOM Evaluation - %*	<0.001 %	SUB (ASB)				<0.001 #			
Anthophyllite*		SUB (ASB)		Not Detected #	Not Detected #	Not Detected #			Not Detected #
Asbestos Quantification - Total - %*	<0.001 %	SUB (ASB)				0.001 #			
Chrysotile*		SUB (ASB)		Not Detected #	Not Detected #	Not Detected #			Not Detected #
Crocidolite*		SUB (ASB)		Not Detected #	Not Detected #	Not Detected #			Not Detected #
Tremolite*		SUB (ASB)		Not Detected #	Not Detected #	Not Detected #			Not Detected #
Non-Asbestos Fibres Detected		SUB (ASB)		Not Detected #	Not Detected #	Not Detected #			Not Detected #
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	13.9 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.011 M	0.0658 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.0658 M
Sulphur, Total	<0.02 %	TM132		0.163		0.175			0.237
Sulphate, Total potential	<0.06 %	TM132		0.489		0.525			0.711
Soil Organic Matter (SOM)	<0.35 %	TM132		3.57 #	3.57 #	1.59 #	18.8 #	4.57 #	4.86 #
pH	1 pH Units	TM133		10.5 M	10.6 M	9.51 M	7.53 M	10.7 M	10.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.6 M	9.91 M	11 M	9.21 M	14.3 M	24.5 M
Cadmium	<0.02 mg/kg	TM181		1.69 M	0.866 M	0.337 M	0.314 M	0.698 M	1.04 M
Chromium	<0.9 mg/kg	TM181		44.7 M	64.2 M	88.4 M	17.7 M	162 M	342 M
Copper	<1.4 mg/kg	TM181		19.9 M	88.5 M	18.5 M	16.8 M	73 M	117 M
Iron	<1000 mg/kg	TM181		57100 #	47300 #	30300 #	29200 #	65800 #	69300 #
Lead	<0.7 mg/kg	TM181		47.6 M	72.8 M	20.8 M	20.5 M	71.3 M	252 M
Manganese	<0.13 mg/kg	TM181		4790 M	4510 M	6890 M	1410 M	8320 M	4990 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	1.2 M
Nickel	<0.2 mg/kg	TM181		14.2 M	18.2 M	10.9 M	21.3 M	24.8 M	26.6 M
Selenium	<1 mg/kg	TM181		2.56 #	3.13 #	3.6 #	1.74 #	3.56 #	2.32 #
Vanadium	<0.2 mg/kg	TM181		118 #	138 #	85.3 #	38 #	104 #	83.2 #
Zinc	<1.9 mg/kg	TM181		204 M	219 M	105 M	105 M	270 M	491 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-M28	40A-M28	40A-M28	40A-M27-V	40A-N28	40A-N28
			Depth (m)	0.50	1.00	2.00	1.80	0.50	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/05/2018	29/05/2018	29/05/2018	30/05/2018	29/05/2018	29/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671491	17671495	17671499	17671402	17671503	17671303
			AGS Reference						
Sulphate, acid soluble (total)	<0.02 %	TM221		0.467		0.21			0.18
Calcium	<21 mg/kg	TM224		113000		125000			105000
Magnesium	<8 mg/kg	TM224		23800		15900			18500
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.756 M		0.118 M			0.189 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N28-V	40A-O28	40A-O28-V			
			Depth (m)	1.20	0.70	1.00			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	29/05/2018	30/05/2018	30/05/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	01/06/2018	01/06/2018	01/06/2018			
			SDG Ref	180602-44	180602-44	180602-44			
			Lab Sample No.(s)	17671307	17671406	17671411			
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		23	3.7	35			
Actinolite*		SUB (ASB)			Not Detected #				
Asbestos Quantification - Gravimetric - %*	<0.001 %	SUB (ASB)			<0.001 #				
Amosite*		SUB (ASB)			Not Detected #				
Asbestos Quantification - PCOM Evaluation - %*	<0.001 %	SUB (ASB)			<0.001 #				
Anthophyllite*		SUB (ASB)			Not Detected #				
Asbestos Quantification - Total - %*	<0.001 %	SUB (ASB)			<0.001 #				
Chrysotile*		SUB (ASB)			Detected #				
Crocidolite*		SUB (ASB)			Not Detected #				
Tremolite*		SUB (ASB)			Not Detected #				
Non-Asbestos Fibres Detected		SUB (ASB)			Not Detected #				
Exchangeable Ammonia as N	<12 mg/kg	TM024		137 M	<12 M	220 M			
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M			
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M			
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M			
Sulphur, Total	<0.02 %	TM132			0.231				
Sulphate, Total potential	<0.06 %	TM132			0.693				
Soil Organic Matter (SOM)	<0.35 %	TM132		1.78 #	3.19 #	6.4 #			
pH	1 pH Units	TM133		8.12 M	11.2 M	7.38 M			
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M			
Arsenic	<0.6 mg/kg	TM181		13.5 M	10 M	13.5 M			
Cadmium	<0.02 mg/kg	TM181		0.294 M	0.85 M	0.451 M			
Chromium	<0.9 mg/kg	TM181		34.8 M	52.8 M	32.5 M			
Copper	<1.4 mg/kg	TM181		12.7 M	40.8 M	17.7 M			
Iron	<1000 mg/kg	TM181		34700 #	48300 #	28600 #			
Lead	<0.7 mg/kg	TM181		26.2 M	94 M	38.1 M			
Manganese	<0.13 mg/kg	TM181		594 M	4780 M	297 M			
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M			
Nickel	<0.2 mg/kg	TM181		34.8 M	16.4 M	25.4 M			
Selenium	<1 mg/kg	TM181		<1 #	2.67 #	<1 #			
Vanadium	<0.2 mg/kg	TM181		58.2 #	105 #	51.6 #			
Zinc	<1.9 mg/kg	TM181		116 M	260 M	135 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N28-V	40A-O28	40A-O28-V			
			Depth (m)	1.20	0.70	1.00			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	29/05/2018	30/05/2018	30/05/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	01/06/2018	01/06/2018	01/06/2018			
			SDG Ref	180602-44	180602-44	180602-44			
			Lab Sample No.(s)	17671307	17671406	17671411			
			AGS Reference						
Sulphate, acid soluble (total)	<0.02 %	TM221			0.39				
Calcium	<21 mg/kg	TM224			100000				
Magnesium	<8 mg/kg	TM224			16800				
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.251 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-E26	40A-E26	40A-E27	40A-E27	40A-E27	40A-E26-V
			Depth (m)	0.50	1.50	0.50	1.00	1.50	2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671416	17671420	17671311	17671315	17671319	17671424
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.9	88.8	104	89.5	89.1	79.4
Acenaphthene-d10 % recovery**	%	TM218		98.1	92	93.1	84.5	92.6	74.5
Phenanthrene-d10 % recovery**	%	TM218		108	93.6	99.9	95.3	99.1	76.2
Chrysene-d12 % recovery**	%	TM218		108	77.5	95.3	106	109	79.5
Perylene-d12 % recovery**	%	TM218		102	74.4	86.9	96.5	102	71.7
Naphthalene	<0.009 mg/kg	TM218		0.226 M	0.203 M	0.213 M	0.123 M	0.0876 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0451 M	0.0222 M	<0.06 M	0.0287 M	0.028 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.129 M	0.178 M	<0.04 M	0.107 M	0.0259 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.087 M	0.144 M	<0.05 M	0.131 M	0.0309 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		2.78 M	0.54 M	0.353 M	1.33 M	0.294 M	0.0271 M
Anthracene	<0.016 mg/kg	TM218		0.461 M	0.127 M	<0.08 M	0.457 M	0.0556 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		3.11 M	0.64 M	0.754 M	2.11 M	0.673 M	0.0361 M
Pyrene	<0.015 mg/kg	TM218		2.88 M	0.595 M	0.833 M	1.9 M	0.676 M	0.0339 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.52 M	0.284 M	0.405 M	0.933 M	0.445 M	0.0185 M
Chrysene	<0.01 mg/kg	TM218		1.38 M	0.32 M	0.468 M	0.951 M	0.534 M	0.0223 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.93 M	0.433 M	0.499 M	1.09 M	0.703 M	0.0276 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.835 M	0.173 M	0.237 M	0.399 M	0.295 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.27 M	0.306 M	0.439 M	0.757 M	0.49 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.952 M	0.275 M	0.326 M	0.465 M	0.362 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.225 M	0.0571 M	<0.115 M	0.108 M	0.0773 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.04 M	0.26 M	0.376 M	0.456 M	0.364 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		18.9	4.56	4.91	11.3	5.14	0.166

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-E27-V	40A-F26	40A-F26	40A-G26	40A-G27	40A-G27
			Depth (m)	2.30	0.70	1.30	0.50	0.40	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671323	17671430	17671435	17671439	17671328	17671332
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.7	89.9	85.5	90.2	104	90.7
Acenaphthene-d10 % recovery**	%	TM218		85	93.1	88.3	89.2	91.6	92.8
Phenanthrene-d10 % recovery**	%	TM218		87.5	98.6	94.6	92.8	99.4	96.7
Chrysene-d12 % recovery**	%	TM218		77	113	84.8	93.7	97	101
Perylene-d12 % recovery**	%	TM218		77	107	75	87	83	97.6
Naphthalene	<0.009 mg/kg	TM218		0.032 M	0.0344 M	0.0769 M	0.0346 M	<0.045 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.032 M	0.0139 M	<0.012 M	<0.06 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0199 M	0.0398 M	0.0327 M	0.0214 M	<0.04 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0211 M	0.0204 M	0.0279 M	0.0272 M	<0.05 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.139 M	0.356 M	0.33 M	0.199 M	0.267 M	0.0276 M
Anthracene	<0.016 mg/kg	TM218		0.0381 M	0.0739 M	0.0564 M	0.032 M	<0.08 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.219 M	1.05 M	0.802 M	0.322 M	0.539 M	0.0691 M
Pyrene	<0.015 mg/kg	TM218		0.206 M	1.07 M	0.811 M	0.319 M	0.494 M	0.0622 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.105 M	0.682 M	0.474 M	0.198 M	0.294 M	0.0422 M
Chrysene	<0.01 mg/kg	TM218		0.111 M	0.754 M	0.675 M	0.241 M	0.355 M	0.0391 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.133 M	1.23 M	1.26 M	0.343 M	0.462 M	0.0508 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0458 M	0.427 M	0.414 M	0.135 M	0.164 M	0.0199 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.101 M	0.976 M	0.551 M	0.25 M	0.291 M	0.0344 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0648 M	0.732 M	0.602 M	0.171 M	0.279 M	0.0237 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.131 M	0.087 M	0.0362 M	<0.115 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0729 M	0.759 M	0.685 M	0.207 M	0.284 M	0.0319 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.31	8.37	6.9	2.54	3.43	0.401

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G27	40A-G27-V	40A-H26	40A-H26	40A-H27	40A-H27
			Depth (m)	2.50	3.30	0.50	1.20	0.50	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671337	17671345	17671450	17671459	17671353	17671358
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.9	92.3	90.9	78.8	93.1	99.8
Acenaphthene-d10 % recovery**	%	TM218		85.6	85.5	83.6	75.3	93.1	98
Phenanthrene-d10 % recovery**	%	TM218		85.8	88.3	93.1	58.3	89.1	101
Chrysene-d12 % recovery**	%	TM218		61.4	94.8	89.5	38.7	75.7	91.1
Perylene-d12 % recovery**	%	TM218		57.2	89	84.3	30.6	77.8	90
Naphthalene	<0.009 mg/kg	TM218		<0.045 M	<0.009 M	0.0804 M	0.0497 M	0.0377 M	0.0245 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.06 M	<0.012 M	<0.06 M	<0.012 M	0.0166 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.04 M	<0.008 M	0.122 M	0.0161 M	0.0147 M	0.00902 M
Fluorene	<0.01 mg/kg	TM218		<0.05 M	<0.01 M	0.0669 M	0.0195 M	0.0118 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.075 M	<0.015 M	0.319 M	0.155 M	0.15 M	0.117 M
Anthracene	<0.016 mg/kg	TM218		<0.08 M	<0.016 M	0.0887 M	0.0288 M	0.0411 M	0.025 M
Fluoranthene	<0.017 mg/kg	TM218		0.123 M	<0.017 M	0.677 M	0.267 M	0.354 M	0.236 M
Pyrene	<0.015 mg/kg	TM218		0.112 M	<0.015 M	0.593 M	0.294 M	0.406 M	0.265 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.07 M	<0.014 M	0.38 M	0.192 M	0.202 M	0.145 M
Chrysene	<0.01 mg/kg	TM218		0.104 M	<0.01 M	0.387 M	0.209 M	0.253 M	0.169 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.155 M	<0.015 M	0.534 M	0.305 M	0.373 M	0.216 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.07 M	<0.014 M	0.185 M	0.125 M	0.139 M	0.0686 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.075 M	<0.015 M	0.375 M	0.243 M	0.266 M	0.138 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.09 M	<0.018 M	0.331 M	0.188 M	0.239 M	0.128 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.115 M	<0.023 M	<0.115 M	0.0394 M	0.0575 M	0.0314 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.12 M	<0.024 M	0.321 M	0.184 M	0.232 M	0.137 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.59	<0.118	4.46	2.31	2.79	1.71

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-I26	40A-I26	40A-I27	40A-I27	40A-I26-V	40A-J26
			Depth (m)	0.50	1.20	0.70	1.50	2.60	1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671463	17671467	17671362	17671367	17671473	17671477
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.9	107	90.8	90.9	90.4	97.7
Acenaphthene-d10 % recovery**	%	TM218		91.4	99.8	92	93.5	87.6	91.2
Phenanthrene-d10 % recovery**	%	TM218		92.9	98.2	92.3	89.3	94.4	94.8
Chrysene-d12 % recovery**	%	TM218		80.2	82.7	72.9	74.9	97.1	82.8
Perylene-d12 % recovery**	%	TM218		80	80.6	68.9	73.6	94.6	82.6
Naphthalene	<0.009 mg/kg	TM218		<0.018 M	0.0273 #	0.0245 M	3.72 M	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.024 M	<0.012 #	<0.012 M	<0.06 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.016 M	<0.008 #	0.0128 M	2.66 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.02 M	<0.01 #	0.0142 M	1.7 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.345 M	0.0273 #	0.0937 M	3.76 M	0.0343 M	0.0247 M
Anthracene	<0.016 mg/kg	TM218		0.0567 M	<0.016 #	0.021 M	0.622 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		1.13 M	0.0198 #	0.168 M	1.39 M	0.0626 M	0.0305 M
Pyrene	<0.015 mg/kg	TM218		1.25 M	<0.015 #	0.173 M	1.02 M	0.0484 M	0.0287 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.706 M	<0.014 #	0.0976 M	0.274 M	0.046 M	0.0167 M
Chrysene	<0.01 mg/kg	TM218		0.771 M	<0.01 #	0.106 M	0.276 M	0.0727 M	0.02 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.12 M	<0.015 #	0.134 M	0.406 M	0.096 M	0.0269 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.379 M	<0.014 #	0.0637 M	0.126 M	0.0289 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.904 M	<0.015 #	0.0901 M	0.187 M	0.0437 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.739 M	<0.018 #	0.0934 M	0.118 M	0.0367 M	0.0208 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.125 M	<0.023 #	<0.023 M	<0.115 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.754 M	<0.024 #	0.102 M	0.158 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		8.28	<0.118	1.19	16.4	0.469	0.168

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-J27	40A-J27	40A-J26-V	40A-K27	40A-K27	40A-K27
			Depth (m)	0.70	1.50	2.80	0.50	1.00	1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671371	17671376	17671481	17671380	17671384	17671388
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.6	91.9	85.4	91.2	91.9	90.5
Acenaphthene-d10 % recovery**	%	TM218		89.5	99.9	86.1	90.7	85.2	94.9
Phenanthrene-d10 % recovery**	%	TM218		96.4	97.7	89.8	91.4	69.6	95
Chrysene-d12 % recovery**	%	TM218		95.9	85.8	79.8	88.2	31.6	72.4
Perylene-d12 % recovery**	%	TM218		89.4	84.6	79.1	83	16.6	71.3
Naphthalene	<0.009 mg/kg	TM218		<0.045 M	0.215 M	<0.009 M	<0.009 M	0.0319 M	0.0292 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.06 M	0.0439 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.124 M	0.263 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.185 M	0.294 M	<0.01 M	<0.01 M	<0.01 M	0.0136 M
Phenanthrene	<0.015 mg/kg	TM218		2.44 M	2.4 M	<0.015 M	<0.015 M	0.0747 M	0.155 M
Anthracene	<0.016 mg/kg	TM218		0.607 M	0.506 M	<0.016 M	<0.016 M	<0.016 M	0.0287 M
Fluoranthene	<0.017 mg/kg	TM218		5.91 M	1.86 M	<0.017 M	<0.017 M	0.0804 M	0.221 M
Pyrene	<0.015 mg/kg	TM218		4.95 M	2.15 M	<0.015 M	<0.015 M	0.0605 M	0.208 M
Benz(a)anthracene	<0.014 mg/kg	TM218		2.52 M	0.986 M	<0.014 M	<0.014 M	0.0191 M	0.148 M
Chrysene	<0.01 mg/kg	TM218		2.39 M	1.13 M	<0.01 M	0.0137 M	0.0307 M	0.188 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.5 M	0.89 M	<0.015 M	0.017 M	0.0286 M	0.232 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.806 M	0.322 M	<0.014 M	<0.014 M	<0.014 M	0.0849 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.65 M	0.624 M	<0.015 M	<0.015 M	<0.015 M	0.158 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.06 M	0.387 M	<0.018 M	<0.018 M	<0.018 M	0.151 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.256 M	0.142 M	<0.023 M	<0.023 M	<0.023 M	0.0337 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1 M	0.433 M	<0.024 M	<0.024 M	<0.024 M	0.165 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		26.4	12.6	<0.118	<0.118	0.326	1.82

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L28	40A-L28	40A-L28	40A-L28	40A-L28-V	40A-M27
			Depth (m)	0.50 - 0.50	1.00	1.50	2.50	3.00	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/05/2018	29/05/2018	29/05/2018	29/05/2018	29/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671299	17671349	17671397	17671455	17671485	17671392
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91	91	83.4	87.4	90.1	85.4
Acenaphthene-d10 % recovery**	%	TM218		93.7	95	88.7	91.6	89.2	85.2
Phenanthrene-d10 % recovery**	%	TM218		94.9	98.3	89.2	92.7	85.5	83.1
Chrysene-d12 % recovery**	%	TM218		80.9	83.6	70.7	93.2	77.3	68.7
Perylene-d12 % recovery**	%	TM218		79.2	81.2	63.3	79.5	81.3	63.6
Naphthalene	<0.009 mg/kg	TM218		0.0204 M	0.0247 M	0.091 M	0.0691 M	<0.009 M	0.0303 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	0.0172 M	<0.012 M	<0.012 M	0.0405 M
Acenaphthene	<0.008 mg/kg	TM218		0.0179 M	0.0111 M	0.0229 M	0.0168 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.0486 M	<0.01 M	<0.01 M	0.019 M
Phenanthrene	<0.015 mg/kg	TM218		0.161 M	0.178 M	0.385 M	0.239 M	<0.015 M	0.287 M
Anthracene	<0.016 mg/kg	TM218		0.0399 M	0.0551 M	0.0994 M	0.052 M	<0.016 M	0.0859 M
Fluoranthene	<0.017 mg/kg	TM218		0.421 M	0.411 M	0.454 M	0.756 M	0.0256 M	1.08 M
Pyrene	<0.015 mg/kg	TM218		0.494 M	0.441 M	0.434 M	0.838 M	<0.015 M	1.07 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.292 M	0.243 M	0.288 M	0.554 M	<0.014 M	0.577 M
Chrysene	<0.01 mg/kg	TM218		0.317 M	0.261 M	0.325 M	0.579 M	<0.01 M	0.534 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.399 M	0.338 M	0.403 M	0.841 M	<0.015 M	0.861 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.156 M	0.123 M	0.172 M	0.286 M	<0.014 M	0.359 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.371 M	0.266 M	0.224 M	0.587 M	<0.015 M	0.803 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.316 M	0.242 M	0.176 M	0.368 M	<0.018 M	0.638 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0635 M	0.0442 M	0.0722 M	0.0871 M	<0.023 M	0.125 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.311 M	0.224 M	0.221 M	0.378 M	<0.024 M	0.673 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.38	2.86	3.43	5.65	<0.118	7.18

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-M28	40A-M28	40A-M28	40A-M27-V	40A-N28	40A-N28
			Depth (m)	0.50	1.00	2.00	1.80	0.50	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/05/2018	29/05/2018	29/05/2018	30/05/2018	29/05/2018	29/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671491	17671495	17671499	17671402	17671503	17671303
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.7	88.3	87.9	91.7	89.6	84.8
Acenaphthene-d10 % recovery**	%	TM218		94.1	88.8	86.4	93.9	89.8	84.9
Phenanthrene-d10 % recovery**	%	TM218		93	99.2	89.1	93	96	81.6
Chrysene-d12 % recovery**	%	TM218		79.4	96.6	84.2	76.5	96.4	82.2
Perylene-d12 % recovery**	%	TM218		86.1	88.3	78.4	75.8	92.2	75.3
Naphthalene	<0.009 mg/kg	TM218		0.211 M	0.089 M	0.0163 M	<0.045 M	0.266 M	0.163 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0699 M	0.0254 M	<0.012 M	<0.06 M	0.048 M	0.0321 M
Acenaphthene	<0.008 mg/kg	TM218		0.0517 M	0.0361 M	<0.008 M	0.159 M	0.0856 M	0.0764 M
Fluorene	<0.01 mg/kg	TM218		0.0859 M	0.0426 M	<0.01 M	0.115 M	0.109 M	0.101 M
Phenanthrene	<0.015 mg/kg	TM218		0.618 M	0.338 M	0.0392 M	0.496 M	0.848 M	0.884 M
Anthracene	<0.016 mg/kg	TM218		0.17 M	0.0748 M	<0.016 M	<0.08 M	0.223 M	0.243 M
Fluoranthene	<0.017 mg/kg	TM218		0.995 M	0.634 M	0.0383 M	0.208 M	1.33 M	1.95 M
Pyrene	<0.015 mg/kg	TM218		0.898 M	0.604 M	0.0363 M	<0.075 M	1.11 M	1.62 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.526 M	0.352 M	0.0227 M	<0.07 M	0.701 M	1.04 M
Chrysene	<0.01 mg/kg	TM218		0.5 M	0.434 M	0.0274 M	<0.05 M	0.61 M	1.07 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.862 M	0.572 M	0.0295 M	<0.075 M	0.86 M	1.36 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.33 M	0.176 M	<0.014 M	<0.07 M	0.374 M	0.461 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.606 M	0.351 M	<0.015 M	<0.075 M	0.708 M	0.932 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.521 M	0.28 M	<0.018 M	<0.09 M	0.532 M	0.61 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.12 M	0.0567 M	<0.023 M	<0.115 M	0.116 M	0.132 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.537 M	0.291 M	<0.024 M	<0.12 M	0.505 M	0.571 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		7.1	4.36	0.21	0.978	8.42	11.2

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N28-V	40A-O28	40A-O28-V			
			Depth (m)	1.20	0.70	1.00			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	29/05/2018	30/05/2018	30/05/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	01/06/2018	01/06/2018	01/06/2018			
			SDG Ref	180602-44	180602-44	180602-44			
			Lab Sample No.(s)	17671307	17671406	17671411			
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		76.7	87.3	89.3			
Acenaphthene-d10 % recovery**	%	TM218		77.6	91.2	92.1			
Phenanthrene-d10 % recovery**	%	TM218		84.4	96.7	95.2			
Chrysene-d12 % recovery**	%	TM218		85.4	105	82.1			
Perylene-d12 % recovery**	%	TM218		81.3	93.3	82.8			
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.0796 M	0.0397 M			
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0221 M	<0.012 M			
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0416 M	0.0301 M			
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.053 M	<0.01 M			
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	0.573 M	0.0357 M			
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.14 M	<0.016 M			
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	1.02 M	0.0517 M			
Pyrene	<0.015 mg/kg	TM218		<0.015 M	0.961 M	0.0415 M			
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	0.571 M	0.0234 M			
Chrysene	<0.01 mg/kg	TM218		<0.01 M	0.569 M	0.0269 M			
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	0.666 M	0.0382 M			
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.253 M	<0.014 M			
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	0.465 M	<0.015 M			
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.324 M	<0.018 M			
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.0831 M	<0.023 M			
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.303 M	<0.024 M			
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	6.12	0.287			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-E26	40A-E26	40A-E27	40A-E27	40A-E27	40A-E26-V
			Depth (m)	0.50	1.50	0.50	1.00	1.50	2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671416	17671420	17671311	17671315	17671319	17671424
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89	92	88	99	89	104
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	0.489	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.228	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		11	5.57	4.44	16.4	21.6	0.606
Aliphatics >C16-C21	<0.1 mg/kg	TM173		29.9	21.2	18	44	47.1	1.45
Aliphatics >C21-C35	<0.1 mg/kg	TM173		157	473	132	209	235	9.2
Aliphatics >C35-C44	<0.1 mg/kg	TM173		46.5	214	55.7	63	89.8	1.47
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		245	714	210	332	393	12.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.151	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	3.64	1.65	<0.1	1.86	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		5.94	15	10.3	5.01	14.9	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		40	135	80.1	38.1	208	3.92
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		7.11	77.5	43.4	8.85	94.8	1.17
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		1.27	30.1	17.6	2.33	38.6	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		53	231	135	52	320	5.09
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		298	945	346	384	713	17.8

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-E27-V	40A-F26	40A-F26	40A-G26	40A-G27	40A-G27
			Depth (m)	2.30	0.70	1.30	0.50	0.40	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671323	17671430	17671435	17671439	17671328	17671332
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		94	110	97	108	90	106
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		0.399	<0.176	<0.176	0.399	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0585	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.14	<0.04	<0.04	0.176	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.791	0.736	4.6	40.2	1.66	0.25
Aliphatics >C16-C21	<0.1 mg/kg	TM173		3.02	5.52	24.6	59.7	10.7	2.8
Aliphatics >C21-C35	<0.1 mg/kg	TM173		12.4	66.7	124	62.1	86.8	91.6
Aliphatics >C35-C44	<0.1 mg/kg	TM173		4.25	35.9	38.9	26.9	37.3	147
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		20.4	109	192	189	136	242
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0505	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0931	<0.04	<0.04	0.118	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	1.57	7.57	0.63	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1.34	3.82	11.3	26.4	4.05	1.77
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		8.67	64.2	87.1	55.5	46	84.9
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		6.1	65.1	42	35.8	49	232
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		2.76	28.4	16	15.1	23.3	120
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		16.1	133	142	125	99.7	318
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		36.9	242	334	314	236	560

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G27	40A-G27-V	40A-H26	40A-H26	40A-H27	40A-H27
			Depth (m)	2.50	3.30	0.50	1.20	0.50	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671337	17671345	17671450	17671459	17671353	17671358
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		82	99	94	61	90	90
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3	0.19	2.09	<0.1	3.49	2.28
Aliphatics >C16-C21	<0.1 mg/kg	TM173		13.6	<0.1	13.6	5.28	18.8	12.4
Aliphatics >C21-C35	<0.1 mg/kg	TM173		115	2.28	158	44.2	186	118
Aliphatics >C35-C44	<0.1 mg/kg	TM173		56.9	3.32	80.2	12.1	81.7	42.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		188	5.8	253	61.5	290	176
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	1.53	0.939	1	0.719
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.73	<0.1	7.62	3.67	8.41	4.85
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		66.6	2.58	119	24.1	105	46.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		81.9	5.57	139	11.1	77.6	35.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		39.6	2.83	60	4.27	32.3	15.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		152	8.15	268	39.8	192	86.8
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		340	13.9	521	101	482	262

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-I26	40A-I26	40A-I27	40A-I27	40A-I26-V	40A-J26
			Depth (m)	0.50	1.20	0.70	1.50	2.60	1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671463	17671467	17671362	17671367	17671473	17671477
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		80	73	97	68	100	97
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	1.14	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0851	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.571	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.45	1.16	1.97	10.3	1.04	0.149
Aliphatics >C16-C21	<0.1 mg/kg	TM173		14.4	3.35	17.1	27.9	2.2	19.7
Aliphatics >C21-C35	<0.1 mg/kg	TM173		94.7	15.4	160	345	13.6	61.6
Aliphatics >C35-C44	<0.1 mg/kg	TM173		64.1	5.84	41.5	237	1.33	8.15
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		175	25.8	220	620	18.2	89.6
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0672	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.381	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.664	1.74	0.194	13.4	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		10.1	4.65	4.56	34.6	<0.1	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		104	12.3	51.8	561	37.3	9.46
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		92.1	5.42	34.6	453	10.9	8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		41.7	2.27	14.2	198	3.54	3.39
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		207	24.1	91.2	1060	48.2	17.5
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		381	49.9	312	1680	66.4	107

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-J27	40A-J27	40A-J26-V	40A-K27	40A-K27	40A-K27
			Depth (m)	0.70	1.50	2.80	0.50	1.00	1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671371	17671376	17671481	17671380	17671384	17671388
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		81	87	102	109	79	96
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	0.546	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	0.106	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.141	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.816	16	<0.1	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		12.9	106	<0.1	0.653	3.55	4.57
Aliphatics >C21-C35	<0.1 mg/kg	TM173		251	431	<0.1	11.6	84.2	56.4
Aliphatics >C35-C44	<0.1 mg/kg	TM173		85.3	128	<0.1	0.78	5.13	19.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		350	681	<0.1	13.1	92.8	80.3
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.148	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.095	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.06	16.1	<0.1	<0.1	<0.1	0.527
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		49.4	75.1	<0.1	<0.1	2.38	2.59
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		162	226	2.44	2.3	26	33.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		59.6	79.5	<0.1	<0.1	7.85	32.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		22.5	33	<0.1	<0.1	2.51	14.5
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		274	397	2.44	2.3	36.2	69.3
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		624	1080	2.44	15.4	129	150

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L28	40A-L28	40A-L28	40A-L28	40A-L28-V	40A-M27
			Depth (m)	0.50 - 0.50	1.00	1.50	2.50	3.00	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/05/2018	29/05/2018	29/05/2018	29/05/2018	29/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671299	17671349	17671397	17671455	17671485	17671392
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		110	103	64	84	101	68
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.28	<0.1	3.94	10.2	<0.1	0.398
Aliphatics >C16-C21	<0.1 mg/kg	TM173		7.11	4.8	25.4	20.6	<0.1	0.559
Aliphatics >C21-C35	<0.1 mg/kg	TM173		48	42.4	363	93	1.02	20.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		21.1	15.8	111	37	<0.1	7.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		78.4	63	503	161	1.02	29.6
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	3.18	1.67	<0.1	0.609
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	3.08	19	8.58	0.312	2.03
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		20.2	28.2	125	56.6	11.9	16.4
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		15.9	17.8	88.6	35.4	2	11
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		6.41	7.45	38.1	14.9	0.491	4.52
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		36.2	49.1	236	102	14.2	30
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		115	112	739	263	15.2	59.6

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-M28	40A-M28	40A-M28	40A-M27-V	40A-N28	40A-N28
			Depth (m)	0.50	1.00	2.00	1.80	0.50	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/05/2018	29/05/2018	29/05/2018	30/05/2018	29/05/2018	29/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671491	17671495	17671499	17671402	17671503	17671303
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		81	87	87	82	95	88
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.044	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.39	3.89	2.36	<0.1	3.28	0.73
Aliphatics >C16-C21	<0.1 mg/kg	TM173		23.3	16	6.52	5.1	13.7	4.06
Aliphatics >C21-C35	<0.1 mg/kg	TM173		189	107	57.2	37.1	88.3	26.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		69.3	31.4	13.8	<0.1	25.5	6.37
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		287	159	79.9	42.1	131	37.8
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.3	1.39	<0.1	<0.1	1.7	0.974
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		11.2	7.72	<0.1	5.43	9.87	4.77
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		83.2	47.5	38.2	63.3	56.2	23.2
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		48.6	23	8.69	3.22	27.1	9.29
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		20.1	8.81	3.16	<0.1	10.9	3.75
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		145	79.6	46.8	72	94.9	38.3
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		433	238	127	114	226	76.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N28-V	40A-O28	40A-O28-V			
			Depth (m)	1.20	0.70	1.00			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	29/05/2018	30/05/2018	30/05/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	01/06/2018	01/06/2018	01/06/2018			
			SDG Ref	180602-44	180602-44	180602-44			
			Lab Sample No.(s)	17671307	17671406	17671411			
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		109	86	93			
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176			
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04			
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04			
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04			
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04			
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	3.1	<0.1			
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	15.9	<0.1			
Aliphatics >C21-C35	<0.1 mg/kg	TM173		7.71	82.8	9.07			
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.33	21.3	<0.1			
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		9.04	123	9.07			
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04			
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04			
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04			
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04			
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.24	<0.1			
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	8.34	1.5			
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		2.6	48.6	38.4			
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		5.21	23.4	5.86			
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		2.21	9.51	2			
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		7.81	81.6	45.8			
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		16.8	205	54.9			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-E26	40A-E26	40A-E27	40A-E27	40A-E27	40A-E26-V
			Depth (m)	0.50	1.50	0.50	1.00	1.50	2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671416	17671420	17671311	17671315	17671319	17671424
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	105	105	108	110	108
Toluene-d8**	%	TM116		98.4	98.2	99.4	100	96.3	98.5
4-Bromofluorobenzene**	%	TM116		97.5	90.8	93	102	92.9	100
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.928 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-E27-V	40A-F26	40A-F26	40A-G26	40A-G27	40A-G27
			Depth (m)	2.30	0.70	1.30	0.50	0.40	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671323	17671430	17671435	17671439	17671328	17671332
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	108	104	109	106	109
Toluene-d8**	%	TM116		98	97.7	99.2	99.7	97.8	99.6
4-Bromofluorobenzene**	%	TM116		97.4	91.1	91.4	95.5	93.1	94.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G27	40A-G27-V	40A-H26	40A-H26	40A-H27	40A-H27
			Depth (m)	2.50	3.30	0.50	1.20	0.50	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671337	17671345	17671450	17671459	17671353	17671358
			AGS Reference						
Dibromofluoromethane**	%	TM116		115	109	107	111	109	109
Toluene-d8**	%	TM116		98.5	98.6	98.2	98.3	97.3	97.8
4-Bromofluorobenzene**	%	TM116		92.3	102	89.5	86.8	94.8	99.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-I26	40A-I26	40A-I27	40A-I27	40A-I26-V	40A-J26
			Depth (m)	0.50	1.20	0.70	1.50	2.60	1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671463	17671467	17671362	17671367	17671473	17671477
			AGS Reference						
Dibromofluoromethane**	%	TM116		115	106	112	114	105	110
Toluene-d8**	%	TM116		94.2	99.8	99.1	94.4	99	100
4-Bromofluorobenzene**	%	TM116		94	86.1	91.3	89.8	91.2	90.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	2.06 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-J27	40A-J27	40A-J26-V	40A-K27	40A-K27	40A-K27
			Depth (m)	0.70	1.50	2.80	0.50	1.00	1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671371	17671376	17671481	17671380	17671384	17671388
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	112	107	94	108	105
Toluene-d8**	%	TM116		97.7	94.5	100	99.8	98.4	99
4-Bromofluorobenzene**	%	TM116		93.2	90.7	104	103	91.5	95.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L28	40A-L28	40A-L28	40A-L28	40A-L28-V	40A-M27
			Depth (m)	0.50 - 0.50	1.00	1.50	2.50	3.00	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/05/2018	29/05/2018	29/05/2018	29/05/2018	29/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671299	17671349	17671397	17671455	17671485	17671392
			AGS Reference						
Dibromofluoromethane**	%	TM116		110	112	109	106	111	113
Toluene-d8**	%	TM116		99.8	98.5	97.4	98	99	95.1
4-Bromofluorobenzene**	%	TM116		104	92.2	81.5	85.7	94.2	87.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-M28	40A-M28	40A-M28	40A-M27-V	40A-N28	40A-N28
			Depth (m)	0.50	1.00	2.00	1.80	0.50	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/05/2018	29/05/2018	29/05/2018	30/05/2018	29/05/2018	29/05/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671491	17671495	17671499	17671402	17671503	17671303
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	108	107	107	106	104
Toluene-d8**	%	TM116		97	98.7	99.1	94.5	98.3	99.2
4-Bromofluorobenzene**	%	TM116		92	87.5	90.6	84.1	92.5	96.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N28-V	40A-O28	40A-O28-V
			Depth (m)	1.20	0.70	1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	29/05/2018	30/05/2018	30/05/2018
			Sample Time	00:00	00:00	00:00
			Date Received	01/06/2018	01/06/2018	01/06/2018
			SDG Ref	180602-44	180602-44	180602-44
			Lab Sample No.(s)	17671307	17671406	17671411
			AGS Reference			
Dibromofluoromethane**	%	TM116		109	106	112
Toluene-d8**	%	TM116		98.6	98.3	97.2
4-Bromofluorobenzene**	%	TM116		94.3	94.7	99.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671299
Sampled Date	29-May-2018
Customer Sample Ref.	40A-L28
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00171	<0.001	0.0171	<0.01	-	-	-
Copper	0.00113	<0.0003	0.0113	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0034	<0.003	0.034	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00109	<0.001	0.0109	<0.01	-	-	-
Vanadium	0.103	<0.001	1.03	<0.01	-	-	-
Zinc	0.00513	<0.001	0.0513	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.232	<0.019	2.32	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000353	<0.00001	0.000353	<0.0001	-	-	-
Acenaphthene by GCMS	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000527	<0.000005	0.000527	<0.00005	-	-	-
Anthracene by GCMS	0.00000793	<0.000005	0.0000793	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000519	<0.000005	0.000519	<0.00005	-	-	-
Fluorene by GCMS	0.00000604	<0.000005	0.0000604	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000699	<0.000005	0.000699	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000239	<0.000082	0.00239	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	352.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

19/06/2018 08:18:03

08:17:25 19/06/2018

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671299
Sampled Date	29-May-2018
Customer Sample Ref.	40A-L28
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	352.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

19/06/2018 08:18:03

08:17:25 19/06/2018

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671303
Sampled Date	29-May-2018
Customer Sample Ref.	40A-N28
Depth (m)	1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.805	<0.2	8.05	<2	-	-	-
Mercury Dissolved (CVAF)	0.000471	<0.00001	0.00471	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0426	<0.0005	0.426	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00295	<0.001	0.0295	<0.01	-	-	-
Copper	0.0236	<0.0003	0.236	<0.003	-	-	-
Lead	0.00436	<0.0002	0.0436	<0.002	-	-	-
Manganese	0.019	<0.003	0.19	<0.03	-	-	-
Nickel	0.00141	<0.0004	0.0141	<0.004	-	-	-
Selenium	0.00246	<0.001	0.0246	<0.01	-	-	-
Vanadium	0.11	<0.001	1.1	<0.01	-	-	-
Zinc	0.013	<0.001	0.13	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.453	<0.019	4.53	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000212	<0.00001	0.000212	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000175	<0.000005	0.000175	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000547	<0.000005	0.000547	<0.00005	-	-	-
Anthracene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000422	<0.000005	0.000422	<0.00005	-	-	-
Fluorene by GCMS	0.0000088	<0.000005	0.000088	<0.00005	-	-	-
Chrysene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Pyrene by GCMS	0.0000513	<0.000005	0.000513	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000202	<0.000005	0.000202	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000394	<0.000005	0.000394	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000197	<0.000002	0.000197	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000535	<0.000005	0.0000535	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000028	<0.000005	0.00028	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000247	<0.000005	0.000247	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000392	<0.000082	0.00392	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.11
Conductivity (µS/cm)	201.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671303
Sampled Date	29-May-2018
Customer Sample Ref.	40A-N28
Depth (m)	1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.11
Conductivity (µS/cm)	201.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671311
Sampled Date	30-May-2018
Customer Sample Ref.	40A-E27
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	2.34	<0.2	23.4	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000115	<0.00001	0.000115	<0.0001	-	-	-
Total Cyanide (W)	0.372	<0.05	3.72	<0.5	-	-	-
Arsenic	0.00301	<0.0005	0.0301	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00124	<0.001	0.0124	<0.01	-	-	-
Copper	0.0155	<0.0003	0.155	<0.003	-	-	-
Lead	0.000915	<0.0002	0.00915	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0033	<0.0004	0.033	<0.004	-	-	-
Selenium	0.012	<0.001	0.12	<0.01	-	-	-
Vanadium	0.0831	<0.001	0.831	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.124	<0.019	1.24	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000855	<0.00001	0.000855	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000563	<0.000005	0.000563	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000618	<0.000005	0.000618	<0.00005	-	-	-
Anthracene by GCMS	0.00000928	<0.000005	0.0000928	<0.00005	-	-	-
Phenanthrene by GCMS	0.000068	<0.000005	0.00068	<0.00005	-	-	-
Fluorene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000696	<0.000005	0.000696	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000366	<0.000082	0.00366	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.05
Conductivity (µS/cm)	455.00
Temperature (°C)	21.40
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671311
Sampled Date	30-May-2018
Customer Sample Ref.	40A-E27
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.05
Conductivity (µS/cm)	455.00
Temperature (°C)	21.40
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.3
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671315
Sampled Date	30-May-2018
Customer Sample Ref.	40A-E27
Depth (m)	1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.934	<0.2	9.34	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00124	<0.0005	0.0124	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00174	<0.001	0.0174	<0.01	-	-	-
Copper	0.0145	<0.0003	0.145	<0.003	-	-	-
Lead	0.00215	<0.0002	0.0215	<0.002	-	-	-
Manganese	0.00758	<0.003	0.0758	<0.03	-	-	-
Nickel	0.00236	<0.0004	0.0236	<0.004	-	-	-
Selenium	0.00285	<0.001	0.0285	<0.01	-	-	-
Vanadium	0.0453	<0.001	0.453	<0.01	-	-	-
Zinc	0.00316	<0.001	0.0316	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.456	<0.019	4.56	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00028	<0.00001	0.0028	<0.0001	-	-	-
Acenaphthene by GCMS	0.000572	<0.000005	0.00572	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Fluoranthene by GCMS	0.000678	<0.000005	0.00678	<0.00005	-	-	-
Anthracene by GCMS	0.000215	<0.000005	0.00215	<0.00005	-	-	-
Phenanthrene by GCMS	0.00165	<0.000005	0.0165	<0.00005	-	-	-
Fluorene by GCMS	0.000217	<0.000005	0.00217	<0.00005	-	-	-
Chrysene by GCMS	0.0000351	<0.000005	0.000351	<0.00005	-	-	-
Pyrene by GCMS	0.000526	<0.000005	0.00526	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0042	<0.000082	0.042	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	11.28
Conductivity (µS/cm)	560.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.3
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671315
Sampled Date	30-May-2018
Customer Sample Ref.	40A-E27
Depth (m)	1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	11.28
Conductivity (µS/cm)	560.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671319
Sampled Date	30-May-2018
Customer Sample Ref.	40A-E27
Depth (m)	1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.47	<0.2	14.7	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.334	<0.05	3.34	<0.5	-	-	-
Arsenic	0.00342	<0.0005	0.0342	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00159	<0.001	0.0159	<0.01	-	-	-
Copper	0.0103	<0.0003	0.103	<0.003	-	-	-
Lead	0.0015	<0.0002	0.015	<0.002	-	-	-
Manganese	0.00914	<0.003	0.0914	<0.03	-	-	-
Nickel	0.00201	<0.0004	0.0201	<0.004	-	-	-
Selenium	0.0049	<0.001	0.049	<0.01	-	-	-
Vanadium	0.106	<0.001	1.06	<0.01	-	-	-
Zinc	0.00369	<0.001	0.0369	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.207	<0.019	2.07	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000674	<0.00001	0.000674	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000507	<0.000005	0.000507	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000358	<0.000005	0.000358	<0.00005	-	-	-
Anthracene by GCMS	0.0000078	<0.000005	0.000078	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000561	<0.000005	0.000561	<0.00005	-	-	-
Fluorene by GCMS	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000347	<0.000005	0.000347	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000268	<0.000082	0.00268	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.83
Conductivity (µS/cm)	344.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671319
Sampled Date	30-May-2018
Customer Sample Ref.	40A-E27
Depth (m)	1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.83
Conductivity (µS/cm)	344.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671328
Sampled Date	30-May-2018
Customer Sample Ref.	40A-G27
Depth (m)	0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	1.51	<0.05	15.1	<0.5	-	-	-
Arsenic	0.00181	<0.0005	0.0181	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00313	<0.001	0.0313	<0.01	-	-	-
Copper	0.00139	<0.0003	0.0139	<0.003	-	-	-
Lead	0.00241	<0.0002	0.0241	<0.002	-	-	-
Manganese	0.00499	<0.003	0.0499	<0.03	-	-	-
Nickel	0.000592	<0.0004	0.00592	<0.004	-	-	-
Selenium	0.00342	<0.001	0.0342	<0.01	-	-	-
Vanadium	0.105	<0.001	1.05	<0.01	-	-	-
Zinc	0.007	<0.001	0.07	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.499	<0.019	4.99	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000156	<0.00001	0.000156	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000102	<0.000005	0.000102	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000181	<0.000005	0.000181	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000031	<0.000002	0.000031	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000828	<0.000082	0.000828	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.58
Conductivity (µS/cm)	235.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671328
Sampled Date	30-May-2018
Customer Sample Ref.	40A-G27
Depth (m)	0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.58
Conductivity (µS/cm)	235.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671332
Sampled Date	30-May-2018
Customer Sample Ref.	40A-G27
Depth (m)	1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00214	<0.001	0.0214	<0.01	-	-	-
Vanadium	0.024	<0.001	0.24	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000243	<0.00001	0.000243	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000791	<0.000005	0.0000791	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000792	<0.000005	0.0000792	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.88
Conductivity (µS/cm)	465.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671332
Sampled Date	30-May-2018
Customer Sample Ref.	40A-G27
Depth (m)	1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	0.021	<0.01	0.21	<0.1	-	-	-
Aliphatics >C16-C21	0.025	<0.01	0.25	<0.1	-	-	-
Aliphatics >C21-C35	0.04	<0.01	0.4	<0.1	-	-	-
Total Aliphatics >C12-C35	0.086	<0.01	0.86	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.086	<0.01	0.86	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.065	<0.01	0.65	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.88
Conductivity (µS/cm)	465.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671337
Sampled Date	30-May-2018
Customer Sample Ref.	40A-G27
Depth (m)	2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.175	<0.05	1.75	<0.5	-	-	-
Arsenic	0.00214	<0.0005	0.0214	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00466	<0.001	0.0466	<0.01	-	-	-
Vanadium	0.0903	<0.001	0.903	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.652	<0.019	6.52	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000166	<0.000005	0.000166	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.27
Conductivity (µS/cm)	125.00
Temperature (°C)	10.90
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671337
Sampled Date	30-May-2018
Customer Sample Ref.	40A-G27
Depth (m)	2.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.27
Conductivity (µS/cm)	125.00
Temperature (°C)	10.90
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671349
Sampled Date	29-May-2018
Customer Sample Ref.	40A-L28
Depth (m)	1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000157	<0.00001	0.000157	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0015	<0.001	0.015	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00739	<0.003	0.0739	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.138	<0.001	1.38	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.345	<0.019	3.45	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000424	<0.00001	0.000424	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000225	<0.000005	0.000225	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000816	<0.000005	0.000816	<0.00005	-	-	-
Anthracene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000918	<0.000005	0.000918	<0.00005	-	-	-
Fluorene by GCMS	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Chrysene by GCMS	0.00000901	<0.000005	0.0000901	<0.00005	-	-	-
Pyrene by GCMS	0.0000823	<0.000005	0.000823	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000353	<0.000082	0.00353	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.04
Conductivity (µS/cm)	412.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671349
Sampled Date	29-May-2018
Customer Sample Ref.	40A-L28
Depth (m)	1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.042	<0.01	0.42	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	0.042	<0.01	0.42	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.035	<0.01	0.35	<0.1	-	-	-
Aromatics >EC21-EC35	0.022	<0.01	0.22	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.057	<0.01	0.57	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.1	<0.01	1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.042	<0.01	0.42	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.04
Conductivity (µS/cm)	412.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671353
Sampled Date	30-May-2018
Customer Sample Ref.	40A-H27
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00112	<0.0005	0.0112	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00715	<0.001	0.0715	<0.01	-	-	-
Copper	0.0022	<0.0003	0.022	<0.003	-	-	-
Lead	0.00117	<0.0002	0.0117	<0.002	-	-	-
Manganese	0.00774	<0.003	0.0774	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0019	<0.001	0.019	<0.01	-	-	-
Vanadium	0.0715	<0.001	0.715	<0.01	-	-	-
Zinc	0.00659	<0.001	0.0659	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.94	<0.019	9.4	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000324	<0.00001	0.000324	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000377	<0.000005	0.000377	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000493	<0.000005	0.000493	<0.00005	-	-	-
Anthracene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000534	<0.000005	0.000534	<0.00005	-	-	-
Fluorene by GCMS	0.00000793	<0.000005	0.0000793	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000069	<0.000005	0.00069	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000263	<0.000082	0.00263	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	396.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671353
Sampled Date	30-May-2018
Customer Sample Ref.	40A-H27
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	396.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671358
Sampled Date	30-May-2018
Customer Sample Ref.	40A-H27
Depth (m)	1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00282	<0.001	0.0282	<0.01	-	-	-
Copper	0.000529	<0.0003	0.00529	<0.003	-	-	-
Lead	0.000549	<0.0002	0.00549	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0118	<0.001	0.118	<0.01	-	-	-
Zinc	0.00137	<0.001	0.0137	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000188	<0.00001	0.000188	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000186	<0.000005	0.000186	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	11.57
Conductivity (µS/cm)	990.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671358
Sampled Date	30-May-2018
Customer Sample Ref.	40A-H27
Depth (m)	1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	11.57
Conductivity (µS/cm)	990.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671362
Sampled Date	30-May-2018
Customer Sample Ref.	40A-I27
Depth (m)	0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.124	<0.05	1.24	<0.5	-	-	-
Arsenic	0.000835	<0.0005	0.00835	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00246	<0.001	0.0246	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00176	<0.001	0.0176	<0.01	-	-	-
Vanadium	0.0768	<0.001	0.768	<0.01	-	-	-
Zinc	0.00754	<0.001	0.0754	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.48	<0.019	4.8	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000455	<0.00001	0.000455	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000136	<0.000005	0.000136	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000203	<0.000005	0.000203	<0.00005	-	-	-
Anthracene by GCMS	0.000005	<0.000005	0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000247	<0.000005	0.000247	<0.00005	-	-	-
Fluorene by GCMS	0.00000722	<0.000005	0.0000722	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000235	<0.000005	0.000235	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00014	<0.000082	0.0014	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	395.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671362
Sampled Date	30-May-2018
Customer Sample Ref.	40A-I27
Depth (m)	0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	395.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671367
Sampled Date	30-May-2018
Customer Sample Ref.	40A-I27
Depth (m)	1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000706	<0.0005	0.00706	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00221	<0.001	0.0221	<0.01	-	-	-
Copper	0.000436	<0.0003	0.00436	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0023	<0.001	0.023	<0.01	-	-	-
Vanadium	0.0961	<0.001	0.961	<0.01	-	-	-
Zinc	0.00128	<0.001	0.0128	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0325	<0.00001	0.325	<0.0001	-	-	-
Acenaphthene by GCMS	0.00777	<0.000005	0.0777	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000696	<0.000005	0.000696	<0.00005	-	-	-
Fluoranthene by GCMS	0.000188	<0.000005	0.00188	<0.00005	-	-	-
Anthracene by GCMS	0.000431	<0.000005	0.00431	<0.00005	-	-	-
Phenanthrene by GCMS	0.00258	<0.000005	0.0258	<0.00005	-	-	-
Fluorene by GCMS	0.00337	<0.000005	0.0337	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.047	<0.000082	0.47	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	11.23
Conductivity (µS/cm)	604.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671367
Sampled Date	30-May-2018
Customer Sample Ref.	40A-I27
Depth (m)	1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.018	<0.01	0.18	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.012	<0.01	0.12	<0.1	-	-	-
Aromatics >EC12-EC16	0.03	<0.01	0.3	<0.1	-	-	-
Aromatics >EC16-EC21	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.036	<0.01	0.36	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.076	<0.01	0.76	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.114	<0.01	1.14	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	11.23
Conductivity (µS/cm)	604.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671371
Sampled Date	30-May-2018
Customer Sample Ref.	40A-J27
Depth (m)	0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00256	<0.0005	0.0256	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00993	<0.001	0.0993	<0.01	-	-	-
Copper	0.00298	<0.0003	0.0298	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000774	<0.0004	0.00774	<0.004	-	-	-
Selenium	0.00275	<0.001	0.0275	<0.01	-	-	-
Vanadium	0.103	<0.001	1.03	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000654	<0.00001	0.000654	<0.0001	-	-	-
Acenaphthene by GCMS	0.000201	<0.000005	0.00201	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000382	<0.000005	0.00382	<0.00005	-	-	-
Anthracene by GCMS	0.000145	<0.000005	0.00145	<0.00005	-	-	-
Phenanthrene by GCMS	0.000595	<0.000005	0.00595	<0.00005	-	-	-
Fluorene by GCMS	0.000148	<0.000005	0.00148	<0.00005	-	-	-
Chrysene by GCMS	0.0000323	<0.000005	0.000323	<0.00005	-	-	-
Pyrene by GCMS	0.000275	<0.000005	0.00275	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000251	<0.000005	0.000251	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000023	<0.000005	0.00023	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000898	<0.000005	0.0000898	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000165	<0.000002	0.000165	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00192	<0.000082	0.0192	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.00
Conductivity (µS/cm)	532.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671371
Sampled Date	30-May-2018
Customer Sample Ref.	40A-J27
Depth (m)	0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.00
Conductivity (µS/cm)	532.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671376
Sampled Date	30-May-2018
Customer Sample Ref.	40A-J27
Depth (m)	1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.289	<0.2	2.89	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.05	<0.05	0.5	<0.5	-	-	-
Arsenic	0.00162	<0.0005	0.0162	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00849	<0.001	0.0849	<0.01	-	-	-
Copper	0.00694	<0.0003	0.0694	<0.003	-	-	-
Lead	0.000779	<0.0002	0.00779	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0056	<0.0004	0.056	<0.004	-	-	-
Selenium	0.00366	<0.001	0.0366	<0.01	-	-	-
Vanadium	0.136	<0.001	1.36	<0.01	-	-	-
Zinc	0.00333	<0.001	0.0333	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.265	<0.019	2.65	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00156	<0.00001	0.0156	<0.0001	-	-	-
Acenaphthene by GCMS	0.000841	<0.000005	0.00841	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000457	<0.000005	0.000457	<0.00005	-	-	-
Fluoranthene by GCMS	0.000359	<0.000005	0.00359	<0.00005	-	-	-
Anthracene by GCMS	0.000239	<0.000005	0.00239	<0.00005	-	-	-
Phenanthrene by GCMS	0.00194	<0.000005	0.0194	<0.00005	-	-	-
Fluorene by GCMS	0.000574	<0.000005	0.00574	<0.00005	-	-	-
Chrysene by GCMS	0.0000427	<0.000005	0.000427	<0.00005	-	-	-
Pyrene by GCMS	0.000362	<0.000005	0.00362	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00598	<0.000082	0.0598	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	11.12
Conductivity (µS/cm)	528.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671376
Sampled Date	30-May-2018
Customer Sample Ref.	40A-J27
Depth (m)	1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.03	<0.01	0.3	<0.1	-	-	-
Aromatics >EC16-EC21	0.026	<0.01	0.26	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.056	<0.01	0.56	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.064	<0.01	0.64	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	11.12
Conductivity (µS/cm)	528.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.7
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671380
Sampled Date	30-May-2018
Customer Sample Ref.	40A-K27
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00825	<0.001	0.0825	<0.01	-	-	-
Copper	0.00126	<0.0003	0.0126	<0.003	-	-	-
Lead	0.00128	<0.0002	0.0128	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00357	<0.001	0.0357	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000141	<0.00001	0.000141	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	12.16
Conductivity (µS/cm)	3,820.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.7
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671380
Sampled Date	30-May-2018
Customer Sample Ref.	40A-K27
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	12.16
Conductivity (µS/cm)	3,820.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671384
Sampled Date	30-May-2018
Customer Sample Ref.	40A-K27
Depth (m)	1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0018	<0.0005	0.018	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000934	<0.0002	0.00934	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00362	<0.001	0.0362	<0.01	-	-	-
Zinc	0.00199	<0.001	0.0199	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.631	<0.019	6.31	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	8.75
Conductivity (µS/cm)	136.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671384
Sampled Date	30-May-2018
Customer Sample Ref.	40A-K27
Depth (m)	1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	8.75
Conductivity (µS/cm)	136.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

19/06/2018 08:18:03

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671388
Sampled Date	30-May-2018
Customer Sample Ref.	40A-K27
Depth (m)	1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00291	<0.0005	0.0291	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00313	<0.001	0.0313	<0.01	-	-	-
Vanadium	0.0296	<0.001	0.296	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.215	<0.019	2.15	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	9.49
Conductivity (µS/cm)	138.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671388
Sampled Date	30-May-2018
Customer Sample Ref.	40A-K27
Depth (m)	1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	9.49
Conductivity (µS/cm)	138.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	5.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.1
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671392
Sampled Date	30-May-2018
Customer Sample Ref.	40A-M27
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00412	<0.0005	0.0412	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000374	<0.0002	0.00374	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00227	<0.001	0.0227	<0.01	-	-	-
Vanadium	0.0177	<0.001	0.177	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.904	<0.019	9.04	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	9.04
Conductivity (µS/cm)	55.00
Temperature (°C)	11.50
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	5.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.1
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671392
Sampled Date	30-May-2018
Customer Sample Ref.	40A-M27
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	9.04
Conductivity (µS/cm)	55.00
Temperature (°C)	11.50
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671397
Sampled Date	29-May-2018
Customer Sample Ref.	40A-L28
Depth (m)	1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00165	<0.0005	0.0165	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00127	<0.001	0.0127	<0.01	-	-	-
Copper	0.00891	<0.0003	0.0891	<0.003	-	-	-
Lead	0.000586	<0.0002	0.00586	<0.002	-	-	-
Manganese	0.00614	<0.003	0.0614	<0.03	-	-	-
Nickel	0.000665	<0.0004	0.00665	<0.004	-	-	-
Selenium	0.00748	<0.001	0.0748	<0.01	-	-	-
Vanadium	0.0248	<0.001	0.248	<0.01	-	-	-
Zinc	0.00145	<0.001	0.0145	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.813	<0.019	8.13	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	10.70
Conductivity (µS/cm)	408.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671397
Sampled Date	29-May-2018
Customer Sample Ref.	40A-L28
Depth (m)	1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	10.70
Conductivity (µS/cm)	408.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.3
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671406
Sampled Date	30-May-2018
Customer Sample Ref.	40A-O28
Depth (m)	0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.309	<0.2	3.09	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000117	<0.00001	0.000117	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00318	<0.0005	0.0318	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0061	<0.0003	0.061	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000553	<0.0004	0.00553	<0.004	-	-	-
Selenium	0.00146	<0.001	0.0146	<0.01	-	-	-
Vanadium	0.068	<0.001	0.68	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000338	<0.00001	0.000338	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000249	<0.000005	0.000249	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000545	<0.000005	0.000545	<0.00005	-	-	-
Anthracene by GCMS	0.00000749	<0.000005	0.0000749	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000421	<0.000005	0.000421	<0.00005	-	-	-
Fluorene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000737	<0.000005	0.000737	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000248	<0.000082	0.00248	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.91
Conductivity (µS/cm)	351.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.3
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671406
Sampled Date	30-May-2018
Customer Sample Ref.	40A-O28
Depth (m)	0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.91
Conductivity (µS/cm)	351.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	21.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.4
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671416
Sampled Date	30-May-2018
Customer Sample Ref.	40A-E26
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.911	<0.2	9.11	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00183	<0.0005	0.0183	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00236	<0.001	0.0236	<0.01	-	-	-
Copper	0.0249	<0.0003	0.249	<0.003	-	-	-
Lead	0.000609	<0.0002	0.00609	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00387	<0.0004	0.0387	<0.004	-	-	-
Selenium	0.00273	<0.001	0.0273	<0.01	-	-	-
Vanadium	0.0674	<0.001	0.674	<0.01	-	-	-
Zinc	0.0103	<0.001	0.103	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00109	<0.00001	0.0109	<0.0001	-	-	-
Acenaphthene by GCMS	0.000716	<0.000005	0.00716	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Fluoranthene by GCMS	0.00163	<0.000005	0.0163	<0.00005	-	-	-
Anthracene by GCMS	0.000595	<0.000005	0.00595	<0.00005	-	-	-
Phenanthrene by GCMS	0.00589	<0.000005	0.0589	<0.00005	-	-	-
Fluorene by GCMS	0.000282	<0.000005	0.00282	<0.00005	-	-	-
Chrysene by GCMS	0.0000624	<0.000005	0.000624	<0.00005	-	-	-
Pyrene by GCMS	0.00111	<0.000005	0.0111	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000577	<0.000005	0.000577	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000233	<0.000005	0.000233	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000686	<0.000005	0.0000686	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000138	<0.000002	0.000138	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0115	<0.000082	0.115	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.12
Conductivity (µS/cm)	569.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.881

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	21.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.4
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671416
Sampled Date	30-May-2018
Customer Sample Ref.	40A-E26
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.017	<0.01	0.17	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.027	<0.01	0.27	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.03	<0.01	0.3	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.12
Conductivity (µS/cm)	569.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.881

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671420
Sampled Date	30-May-2018
Customer Sample Ref.	40A-E26
Depth (m)	1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.772	<0.2	7.72	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0028	<0.0005	0.028	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00803	<0.0003	0.0803	<0.003	-	-	-
Lead	0.000366	<0.0002	0.00366	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00265	<0.0004	0.0265	<0.004	-	-	-
Selenium	0.00258	<0.001	0.0258	<0.01	-	-	-
Vanadium	0.0782	<0.001	0.782	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.279	<0.019	2.79	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000492	<0.00001	0.00492	<0.0001	-	-	-
Acenaphthene by GCMS	0.00161	<0.000005	0.0161	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Fluoranthene by GCMS	0.000175	<0.000005	0.00175	<0.00005	-	-	-
Anthracene by GCMS	0.0000649	<0.000005	0.000649	<0.00005	-	-	-
Phenanthrene by GCMS	0.000575	<0.000005	0.00575	<0.00005	-	-	-
Fluorene by GCMS	0.000544	<0.000005	0.00544	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00362	<0.000082	0.0362	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.76
Conductivity (µS/cm)	1,160.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671420
Sampled Date	30-May-2018
Customer Sample Ref.	40A-E26
Depth (m)	1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.76
Conductivity (µS/cm)	1,160.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671430
Sampled Date	30-May-2018
Customer Sample Ref.	40A-F26
Depth (m)	0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000534	<0.0005	0.00534	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00113	<0.0003	0.0113	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00325	<0.001	0.0325	<0.01	-	-	-
Vanadium	0.125	<0.001	1.25	<0.01	-	-	-
Zinc	0.00117	<0.001	0.0117	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000213	<0.00001	0.000213	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000331	<0.000005	0.000331	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000379	<0.000005	0.000379	<0.00005	-	-	-
Anthracene by GCMS	0.00000631	<0.000005	0.0000631	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000364	<0.000005	0.000364	<0.00005	-	-	-
Fluorene by GCMS	0.00000576	<0.000005	0.0000576	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000288	<0.000005	0.000288	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00017	<0.000082	0.0017	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.15
Conductivity (µS/cm)	793.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671430
Sampled Date	30-May-2018
Customer Sample Ref.	40A-F26
Depth (m)	0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.15
Conductivity (µS/cm)	793.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671435
Sampled Date	30-May-2018
Customer Sample Ref.	40A-F26
Depth (m)	1.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00165	<0.0005	0.0165	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00228	<0.001	0.0228	<0.01	-	-	-
Vanadium	0.113	<0.001	1.13	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000541	<0.00001	0.000541	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000335	<0.000005	0.000335	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000221	<0.000005	0.000221	<0.00005	-	-	-
Anthracene by GCMS	0.00000626	<0.000005	0.0000626	<0.00005	-	-	-
Phenanthrene by GCMS	0.000024	<0.000005	0.00024	<0.00005	-	-	-
Fluorene by GCMS	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000285	<0.000005	0.000285	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000179	<0.000082	0.00179	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.86
Conductivity (µS/cm)	378.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671435
Sampled Date	30-May-2018
Customer Sample Ref.	40A-F26
Depth (m)	1.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C16-C21	0.016	<0.01	0.16	<0.1	-	-	-
Aliphatics >C21-C35	0.035	<0.01	0.35	<0.1	-	-	-
Total Aliphatics >C12-C35	0.062	<0.01	0.62	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.027	<0.01	0.27	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.027	<0.01	0.27	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.092	<0.01	0.92	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.051	<0.01	0.51	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.86
Conductivity (µS/cm)	378.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671439
Sampled Date	30-May-2018
Customer Sample Ref.	40A-G26
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0088	<0.001	0.088	<0.01	-	-	-
Copper	0.00145	<0.0003	0.0145	<0.003	-	-	-
Lead	0.000378	<0.0002	0.00378	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000508	<0.0004	0.00508	<0.004	-	-	-
Selenium	0.00103	<0.001	0.0103	<0.01	-	-	-
Vanadium	0.0111	<0.001	0.111	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000251	<0.00001	0.00251	<0.0001	-	-	-
Acenaphthene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000027	<0.000005	0.00027	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000707	<0.000005	0.000707	<0.00005	-	-	-
Anthracene by GCMS	0.0000514	<0.000005	0.000514	<0.00005	-	-	-
Phenanthrene by GCMS	0.000357	<0.000005	0.00357	<0.00005	-	-	-
Fluorene by GCMS	0.0000982	<0.000005	0.000982	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000751	<0.000005	0.000751	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00104	<0.000082	0.0104	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.84
Conductivity (µS/cm)	2,100.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671439
Sampled Date	30-May-2018
Customer Sample Ref.	40A-G26
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	0.03	<0.01	0.3	<0.1	-	-	-
Aliphatics >C16-C21	0.021	<0.01	0.21	<0.1	-	-	-
Aliphatics >C21-C35	0.033	<0.01	0.33	<0.1	-	-	-
Total Aliphatics >C12-C35	0.084	<0.01	0.84	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.032	<0.01	0.32	<0.1	-	-	-
Aromatics >EC16-EC21	0.021	<0.01	0.21	<0.1	-	-	-
Aromatics >EC21-EC35	0.013	<0.01	0.13	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.066	<0.01	0.66	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.152	<0.01	1.52	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.054	<0.01	0.54	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.84
Conductivity (µS/cm)	2,100.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.49
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.8
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671450
Sampled Date	30-May-2018
Customer Sample Ref.	40A-H26
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000147	<0.00001	0.000147	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00104	<0.0005	0.0104	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00113	<0.001	0.0113	<0.01	-	-	-
Copper	0.00291	<0.0003	0.0291	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00148	<0.0004	0.0148	<0.004	-	-	-
Selenium	0.00168	<0.001	0.0168	<0.01	-	-	-
Vanadium	0.106	<0.001	1.06	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000409	<0.00001	0.000409	<0.0001	-	-	-
Acenaphthene by GCMS	0.000229	<0.000005	0.00229	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000941	<0.000005	0.000941	<0.00005	-	-	-
Anthracene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000822	<0.000005	0.000822	<0.00005	-	-	-
Fluorene by GCMS	0.0000363	<0.000005	0.000363	<0.00005	-	-	-
Chrysene by GCMS	0.0000156	<0.000005	0.000156	<0.00005	-	-	-
Pyrene by GCMS	0.0000881	<0.000005	0.000881	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000956	<0.000005	0.0000956	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000612	<0.000082	0.00612	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.62
Conductivity (µS/cm)	223.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.49
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.8
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671450
Sampled Date	30-May-2018
Customer Sample Ref.	40A-H26
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.62
Conductivity (µS/cm)	223.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	16
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86.2
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671455
Sampled Date	29-May-2018
Customer Sample Ref.	40A-L28
Depth (m)	2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.00001	<0.00001	0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00348	<0.001	0.0348	<0.01	-	-	-
Copper	0.00243	<0.0003	0.0243	<0.003	-	-	-
Lead	0.000486	<0.0002	0.00486	<0.002	-	-	-
Manganese	0.0146	<0.003	0.146	<0.03	-	-	-
Nickel	0.000439	<0.0004	0.00439	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0583	<0.001	0.583	<0.01	-	-	-
Zinc	0.00159	<0.001	0.0159	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.669	<0.019	6.69	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000356	<0.00001	0.000356	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000701	<0.000005	0.0000701	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.33
Conductivity (µS/cm)	651.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.886

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	16
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86.2
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671455
Sampled Date	29-May-2018
Customer Sample Ref.	40A-L28
Depth (m)	2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.33
Conductivity (µS/cm)	651.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.886

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671459
Sampled Date	30-May-2018
Customer Sample Ref.	40A-H26
Depth (m)	1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.518	<0.2	5.18	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00335	<0.0005	0.0335	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00169	<0.0003	0.0169	<0.003	-	-	-
Lead	0.00127	<0.0002	0.0127	<0.002	-	-	-
Manganese	0.00665	<0.003	0.0665	<0.03	-	-	-
Nickel	0.000821	<0.0004	0.00821	<0.004	-	-	-
Selenium	0.00911	<0.001	0.0911	<0.01	-	-	-
Vanadium	0.189	<0.001	1.89	<0.01	-	-	-
Zinc	0.00733	<0.001	0.0733	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.529	<0.019	5.29	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.42
Conductivity (µS/cm)	166.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671459
Sampled Date	30-May-2018
Customer Sample Ref.	40A-H26
Depth (m)	1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.42
Conductivity (µS/cm)	166.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671463
Sampled Date	30-May-2018
Customer Sample Ref.	40A-I26
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00849	<0.001	0.0849	<0.01	-	-	-
Copper	0.00262	<0.0003	0.0262	<0.003	-	-	-
Lead	0.00116	<0.0002	0.0116	<0.002	-	-	-
Manganese	0.00381	<0.003	0.0381	<0.03	-	-	-
Nickel	0.000633	<0.0004	0.00633	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0192	<0.001	0.192	<0.01	-	-	-
Zinc	0.00201	<0.001	0.0201	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.196	<0.019	1.96	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000495	<0.00001	0.000495	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000325	<0.000005	0.000325	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000178	<0.000005	0.00178	<0.00005	-	-	-
Anthracene by GCMS	0.0000164	<0.000005	0.000164	<0.00005	-	-	-
Phenanthrene by GCMS	0.000164	<0.000005	0.00164	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.000014	<0.000005	0.00014	<0.00005	-	-	-
Pyrene by GCMS	0.000188	<0.000005	0.00188	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000654	<0.000082	0.00654	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.72
Conductivity (µS/cm)	1,310.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671463
Sampled Date	30-May-2018
Customer Sample Ref.	40A-I26
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.72
Conductivity (µS/cm)	1,310.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671467
Sampled Date	30-May-2018
Customer Sample Ref.	40A-I26
Depth (m)	1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.203	<0.2	2.03	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00909	<0.0005	0.0909	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000575	<0.0004	0.00575	<0.004	-	-	-
Selenium	0.033	<0.001	0.33	<0.01	-	-	-
Vanadium	0.137	<0.001	1.37	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.235	<0.019	2.35	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000904	<0.000005	0.0000904	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000899	<0.000005	0.0000899	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	9.69
Conductivity (µS/cm)	115.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671467
Sampled Date	30-May-2018
Customer Sample Ref.	40A-I26
Depth (m)	1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	9.69
Conductivity (µS/cm)	115.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671477
Sampled Date	30-May-2018
Customer Sample Ref.	40A-J26
Depth (m)	1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00877	<0.0005	0.0877	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000577	<0.0004	0.00577	<0.004	-	-	-
Selenium	0.00339	<0.001	0.0339	<0.01	-	-	-
Vanadium	0.072	<0.001	0.72	<0.01	-	-	-
Zinc	0.00201	<0.001	0.0201	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.22	<0.019	2.2	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	9.22
Conductivity (µS/cm)	103.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671477
Sampled Date	30-May-2018
Customer Sample Ref.	40A-J26
Depth (m)	1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	9.22
Conductivity (µS/cm)	103.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671491
Sampled Date	29-May-2018
Customer Sample Ref.	40A-M28
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00239	<0.0005	0.0239	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00292	<0.0003	0.0292	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00047	<0.0004	0.0047	<0.004	-	-	-
Selenium	0.00205	<0.001	0.0205	<0.01	-	-	-
Vanadium	0.126	<0.001	1.26	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000746	<0.00001	0.000746	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000552	<0.000005	0.000552	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000831	<0.000005	0.0000831	<0.00005	-	-	-
Fluoranthene by GCMS	0.000118	<0.000005	0.00118	<0.00005	-	-	-
Anthracene by GCMS	0.0000204	<0.000005	0.000204	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000834	<0.000005	0.000834	<0.00005	-	-	-
Fluorene by GCMS	0.0000188	<0.000005	0.000188	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000495	<0.000082	0.00495	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.65
Conductivity (µS/cm)	288.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671491
Sampled Date	29-May-2018
Customer Sample Ref.	40A-M28
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	0.02	<0.01	0.2	<0.1	-	-	-
Aliphatics >C16-C21	0.021	<0.01	0.21	<0.1	-	-	-
Aliphatics >C21-C35	0.045	<0.01	0.45	<0.1	-	-	-
Total Aliphatics >C12-C35	0.086	<0.01	0.86	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics >EC16-EC21	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.01	<0.01	0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.031	<0.01	0.31	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.12	<0.01	1.2	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.066	<0.01	0.66	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.65
Conductivity (µS/cm)	288.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.56
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.5
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671495
Sampled Date	29-May-2018
Customer Sample Ref.	40A-M28
Depth (m)	1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00259	<0.0005	0.0259	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00176	<0.0003	0.0176	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000597	<0.0004	0.00597	<0.004	-	-	-
Selenium	0.00236	<0.001	0.0236	<0.01	-	-	-
Vanadium	0.105	<0.001	1.05	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000407	<0.00001	0.000407	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000287	<0.000005	0.000287	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000634	<0.000005	0.000634	<0.00005	-	-	-
Anthracene by GCMS	0.00000793	<0.000005	0.0000793	<0.00005	-	-	-
Phenanthrene by GCMS	0.000056	<0.000005	0.00056	<0.00005	-	-	-
Fluorene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Chrysene by GCMS	0.0000134	<0.000005	0.000134	<0.00005	-	-	-
Pyrene by GCMS	0.0000749	<0.000005	0.000749	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000802	<0.000005	0.0000802	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000503	<0.000005	0.0000503	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000694	<0.000002	0.0000694	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000776	<0.000005	0.0000776	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000351	<0.000082	0.00351	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.52
Conductivity (µS/cm)	252.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.56
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.5
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671495
Sampled Date	29-May-2018
Customer Sample Ref.	40A-M28
Depth (m)	1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	10.52
Conductivity (µS/cm)	252.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

19/06/2018 08:18:03

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671499
Sampled Date	29-May-2018
Customer Sample Ref.	40A-M28
Depth (m)	2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0109	<0.0005	0.109	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00476	<0.001	0.0476	<0.01	-	-	-
Vanadium	0.12	<0.001	1.2	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000138	<0.00001	0.000138	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000157	<0.000005	0.000157	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000187	<0.000005	0.000187	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	9.52
Conductivity (µS/cm)	146.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

19/06/2018 08:18:03

08:17:25 19/06/2018

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671499
Sampled Date	29-May-2018
Customer Sample Ref.	40A-M28
Depth (m)	2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jun-2018
pH (pH Units)	9.52
Conductivity (µS/cm)	146.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	16.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85.5
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671503
Sampled Date	29-May-2018
Customer Sample Ref.	40A-N28
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.322	<0.2	3.22	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000335	<0.00001	0.000335	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00871	<0.0005	0.0871	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00151	<0.001	0.0151	<0.01	-	-	-
Copper	0.00933	<0.0003	0.0933	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000901	<0.0004	0.00901	<0.004	-	-	-
Selenium	0.00101	<0.001	0.0101	<0.01	-	-	-
Vanadium	0.129	<0.001	1.29	<0.01	-	-	-
Zinc	0.00182	<0.001	0.0182	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000394	<0.00001	0.000394	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000411	<0.000005	0.000411	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000901	<0.000005	0.000901	<0.00005	-	-	-
Anthracene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000786	<0.000005	0.000786	<0.00005	-	-	-
Fluorene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000886	<0.000005	0.000886	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000386	<0.000082	0.00386	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.78
Conductivity (µS/cm)	311.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	16.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85.5
Particle Size <4mm	>95%		

Case	
SDG	180602-44
Lab Sample Number(s)	17671503
Sampled Date	29-May-2018
Customer Sample Ref.	40A-N28
Depth (m)	0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.78
Conductivity (µS/cm)	311.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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08:17:25 19/06/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Notification of NDPs (No determination possible)

Date Received : 02/06/2018 12:10:28

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
17671397	40A-L28	1.50	PAH Spec MS - Aqueous (W)	Insufficient sample remaining for repeat analysis
17671397	40A-L28	1.50	CEN 10:1 Leachate (1 Stage)	Insufficient sample remaining for repeat analysis
17671397	40A-L28	1.50	CEN Readings	Insufficient sample remaining for repeat analysis

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB (ASB)		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Test Completion Dates

Lab Sample No(s)	17671416	17671420	17671311	17671315	17671319	17671424	17671323	17671430	17671435	17671439
Customer Sample Ref.	40A-E26	40A-E26	40A-E27	40A-E27	40A-E27	40A-E26-V	40A-E27-V	40A-F26	40A-F26	40A-G26
AGS Ref.										
Depth	0.50	1.50	0.50	1.00	1.50	2.50	2.30	0.70	1.30	0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		07-Jun-2018	11-Jun-2018		07-Jun-2018				07-Jun-2018	08-Jun-2018
Ammoniacal Nitrogen	08-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018			12-Jun-2018	08-Jun-2018	11-Jun-2018
Ammonium Soil by Titration	08-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018
Anions by Kone (soil)		08-Jun-2018	12-Jun-2018		12-Jun-2018				08-Jun-2018	08-Jun-2018
Asbestos fibres in Soil*		18-Jun-2018	18-Jun-2018		18-Jun-2018				18-Jun-2018	18-Jun-2018
Asbestos Quantification - Full*		18-Jun-2018							18-Jun-2018	
CEN 10:1 Leachate (1 Stage)	05-Jun-2018	05-Jun-2018	05-Jun-2018	04-Jun-2018	05-Jun-2018			04-Jun-2018	05-Jun-2018	05-Jun-2018
CEN Readings	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018			07-Jun-2018	07-Jun-2018	07-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018
Dissolved Metals by ICP-MS	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018			11-Jun-2018	11-Jun-2018	11-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	08-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	09-Jun-2018			11-Jun-2018	08-Jun-2018	08-Jun-2018
EPH CWG (Aliphatic) GC (S)	07-Jun-2018	08-Jun-2018	08-Jun-2018	07-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	06-Jun-2018	06-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	08-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	09-Jun-2018			11-Jun-2018	08-Jun-2018	08-Jun-2018
EPH CWG (Aromatic) GC (S)	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018	06-Jun-2018
GRO by GC-FID (S)	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018
GRO by GC-FID (W)	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018			07-Jun-2018	08-Jun-2018	08-Jun-2018
Mercury Dissolved	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018			08-Jun-2018	08-Jun-2018	08-Jun-2018
Metals in solid samples by OES	08-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	06-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018
PAH by GCMS	05-Jun-2018	08-Jun-2018	05-Jun-2018	06-Jun-2018	06-Jun-2018	07-Jun-2018	08-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018
PAH Spec MS - Aqueous (W)	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018			08-Jun-2018	08-Jun-2018	08-Jun-2018
pH	08-Jun-2018	12-Jun-2018	11-Jun-2018	08-Jun-2018	05-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018
pH Value	11-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018			12-Jun-2018	08-Jun-2018	08-Jun-2018
Phenols by HPLC (S)	08-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018
Sample description	04-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018	03-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018
Total Organic Carbon	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	06-Jun-2018	06-Jun-2018	11-Jun-2018	07-Jun-2018
Total Sulphate		07-Jun-2018	07-Jun-2018		05-Jun-2018				06-Jun-2018	07-Jun-2018
Total Sulphur		08-Jun-2018	11-Jun-2018		05-Jun-2018				08-Jun-2018	08-Jun-2018
TPH CWG (W)	08-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	09-Jun-2018			11-Jun-2018	08-Jun-2018	08-Jun-2018
TPH CWG GC (S)	07-Jun-2018	08-Jun-2018	08-Jun-2018	07-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018
VOC MS (S)	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018

Lab Sample No(s)	17671328	17671332	17671337	17671345	17671450	17671459	17671353	17671358	17671463	17671467
Customer Sample Ref.	40A-G27	40A-G27	40A-G27	40A-G27-V	40A-H26	40A-H26	40A-H27	40A-H27	40A-I26	40A-I26
AGS Ref.										
Depth	0.40	1.00	2.50	3.30	0.50	1.20	0.50	1.00	0.50	1.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		07-Jun-2018				07-Jun-2018	07-Jun-2018			07-Jun-2018
Ammoniacal Nitrogen	11-Jun-2018	11-Jun-2018	11-Jun-2018		11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
Ammonium Soil by Titration	08-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018
Anions by Kone (soil)		08-Jun-2018				08-Jun-2018	08-Jun-2018			12-Jun-2018
Asbestos fibres in Soil*	18-Jun-2018	18-Jun-2018				18-Jun-2018	18-Jun-2018			18-Jun-2018
Asbestos Quantification - Full*						18-Jun-2018	18-Jun-2018			18-Jun-2018
CEN 10:1 Leachate (1 Stage)	05-Jun-2018	05-Jun-2018	04-Jun-2018		04-Jun-2018	04-Jun-2018	05-Jun-2018	04-Jun-2018	05-Jun-2018	05-Jun-2018
CEN Readings	07-Jun-2018	07-Jun-2018	11-Jun-2018		07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
Dissolved Metals by ICP-MS	11-Jun-2018	11-Jun-2018	11-Jun-2018		11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	09-Jun-2018	08-Jun-2018	08-Jun-2018		11-Jun-2018	11-Jun-2018	09-Jun-2018	08-Jun-2018	09-Jun-2018	08-Jun-2018
EPH CWG (Aliphatic) GC (S)	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018	06-Jun-2018	08-Jun-2018	06-Jun-2018	06-Jun-2018	08-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	09-Jun-2018	08-Jun-2018	08-Jun-2018		11-Jun-2018	11-Jun-2018	09-Jun-2018	08-Jun-2018	09-Jun-2018	08-Jun-2018
EPH CWG (Aromatic) GC (S)	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018	07-Jun-2018	06-Jun-2018	06-Jun-2018	07-Jun-2018
GRO by GC-FID (S)	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018
GRO by GC-FID (W)	08-Jun-2018	08-Jun-2018	08-Jun-2018		08-Jun-2018	07-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018
Mercury Dissolved	08-Jun-2018	08-Jun-2018	07-Jun-2018		08-Jun-2018	08-Jun-2018	08-Jun-2018	07-Jun-2018	08-Jun-2018	08-Jun-2018
Metals in solid samples by OES	07-Jun-2018	11-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018
PAH by GCMS	05-Jun-2018	06-Jun-2018	07-Jun-2018	06-Jun-2018	05-Jun-2018	08-Jun-2018	08-Jun-2018	05-Jun-2018	08-Jun-2018	08-Jun-2018
PAH Spec MS - Aqueous (W)	08-Jun-2018	08-Jun-2018	08-Jun-2018		08-Jun-2018	08-Jun-2018	08-Jun-2018	07-Jun-2018	08-Jun-2018	08-Jun-2018
pH	11-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018
pH Value	11-Jun-2018	08-Jun-2018	11-Jun-2018		11-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018
Phenols by HPLC (S)	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018
Sample description	03-Jun-2018	04-Jun-2018	03-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018	03-Jun-2018	03-Jun-2018	03-Jun-2018	04-Jun-2018
Total Organic Carbon	11-Jun-2018	07-Jun-2018	06-Jun-2018	06-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018	08-Jun-2018
Total Sulphate		06-Jun-2018				07-Jun-2018	07-Jun-2018			07-Jun-2018
Total Sulphur		11-Jun-2018				08-Jun-2018	08-Jun-2018			08-Jun-2018
TPH CWG (W)	09-Jun-2018	08-Jun-2018	08-Jun-2018		11-Jun-2018	11-Jun-2018	09-Jun-2018	08-Jun-2018	09-Jun-2018	11-Jun-2018
TPH CWG GC (S)	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018
VOC MS (S)	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Lab Sample No(s)	17671362	17671367	17671473	17671477	17671371	17671376	17671481	17671380	17671384	17671388
Customer Sample Ref.	40A-I27	40A-I27	40A-I26-V	40A-J26	40A-J27	40A-J27	40A-J26-V	40A-K27	40A-K27	40A-K27
AGS Ref.										
Depth	0.70	1.50	2.60	1.50	0.70	1.50	2.80	0.50	1.00	1.70
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	07-Jun-2018			08-Jun-2018	07-Jun-2018			08-Jun-2018		07-Jun-2018
Ammoniacal Nitrogen	11-Jun-2018	12-Jun-2018		11-Jun-2018	11-Jun-2018	11-Jun-2018		11-Jun-2018	11-Jun-2018	11-Jun-2018
Ammonium Soil by Titration	11-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
Anions by Kone (soil)	08-Jun-2018			08-Jun-2018	08-Jun-2018			08-Jun-2018		08-Jun-2018
Asbestos fibres in Soil*	18-Jun-2018			18-Jun-2018	18-Jun-2018	18-Jun-2018		18-Jun-2018		18-Jun-2018
Asbestos Quantification - Full*					18-Jun-2018	18-Jun-2018				
CEN 10:1 Leachate (1 Stage)	04-Jun-2018	04-Jun-2018		04-Jun-2018	04-Jun-2018	04-Jun-2018		04-Jun-2018	04-Jun-2018	04-Jun-2018
CEN Readings	07-Jun-2018	07-Jun-2018		07-Jun-2018	07-Jun-2018	07-Jun-2018		07-Jun-2018	07-Jun-2018	07-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
Dissolved Metals by ICP-MS	11-Jun-2018	11-Jun-2018		11-Jun-2018	11-Jun-2018	11-Jun-2018		11-Jun-2018	11-Jun-2018	11-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	08-Jun-2018	08-Jun-2018		08-Jun-2018	08-Jun-2018	08-Jun-2018		11-Jun-2018	08-Jun-2018	08-Jun-2018
EPH CWG (Aliphatic) GC (S)	06-Jun-2018	08-Jun-2018	06-Jun-2018	06-Jun-2018	06-Jun-2018	05-Jun-2018	06-Jun-2018	06-Jun-2018	06-Jun-2018	06-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	08-Jun-2018	08-Jun-2018		08-Jun-2018	08-Jun-2018	08-Jun-2018		11-Jun-2018	08-Jun-2018	08-Jun-2018
EPH CWG (Aromatic) GC (S)	06-Jun-2018	07-Jun-2018	06-Jun-2018	06-Jun-2018	06-Jun-2018	05-Jun-2018	06-Jun-2018	06-Jun-2018	06-Jun-2018	06-Jun-2018
GRO by GC-FID (S)	07-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018
GRO by GC-FID (W)	08-Jun-2018	11-Jun-2018		08-Jun-2018	08-Jun-2018	11-Jun-2018		07-Jun-2018	08-Jun-2018	12-Jun-2018
Mercury Dissolved	07-Jun-2018	07-Jun-2018		07-Jun-2018	07-Jun-2018	07-Jun-2018		08-Jun-2018	07-Jun-2018	07-Jun-2018
Metals in solid samples by OES	11-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018
PAH by GCMS	08-Jun-2018	08-Jun-2018	05-Jun-2018	08-Jun-2018	05-Jun-2018	08-Jun-2018	08-Jun-2018	05-Jun-2018	12-Jun-2018	08-Jun-2018
PAH Spec MS - Aqueous (W)	08-Jun-2018	08-Jun-2018		08-Jun-2018	07-Jun-2018	08-Jun-2018		08-Jun-2018	08-Jun-2018	07-Jun-2018
pH	11-Jun-2018	08-Jun-2018	08-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018
pH Value	11-Jun-2018	11-Jun-2018		11-Jun-2018	11-Jun-2018	11-Jun-2018		11-Jun-2018	11-Jun-2018	11-Jun-2018
Phenols by HPLC (S)	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018
Sample description	03-Jun-2018	03-Jun-2018	03-Jun-2018	03-Jun-2018	03-Jun-2018	03-Jun-2018	04-Jun-2018	03-Jun-2018	03-Jun-2018	03-Jun-2018
Total Organic Carbon	07-Jun-2018	08-Jun-2018	06-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018	07-Jun-2018	06-Jun-2018	07-Jun-2018
Total Sulphate	07-Jun-2018			07-Jun-2018	06-Jun-2018			07-Jun-2018		07-Jun-2018
Total Sulphur	11-Jun-2018			11-Jun-2018	08-Jun-2018			08-Jun-2018		08-Jun-2018
TPH CWG (W)	08-Jun-2018	11-Jun-2018		09-Jun-2018	08-Jun-2018	11-Jun-2018		11-Jun-2018	08-Jun-2018	12-Jun-2018
TPH CWG GC (S)	07-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018
VOC MS (S)	07-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018

Lab Sample No(s)	17671299	17671349	17671397	17671455	17671485	17671392	17671491	17671495	17671499	17671402
Customer Sample Ref.	40A-L28	40A-L28	40A-L28	40A-L28	40A-L28-V	40A-M27	40A-M28	40A-M28	40A-M28	40A-M27-V
AGS Ref.										
Depth	0.50 - 0.50	1.00	1.50	2.50	3.00	1.00 - 1.00	0.50	1.00	2.00	1.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	07-Jun-2018		07-Jun-2018			07-Jun-2018	07-Jun-2018		07-Jun-2018	
Ammoniacal Nitrogen	11-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018		12-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	
Ammonium Soil by Titration	11-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018
Anions by Kone (soil)	08-Jun-2018		08-Jun-2018			08-Jun-2018	08-Jun-2018		08-Jun-2018	
Asbestos fibres in Soil*	18-Jun-2018	18-Jun-2018	18-Jun-2018			18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	
Asbestos Quantification - Full*									18-Jun-2018	
CEN 10:1 Leachate (1 Stage)	05-Jun-2018	05-Jun-2018	06-Jun-2018	05-Jun-2018		04-Jun-2018	05-Jun-2018	04-Jun-2018	04-Jun-2018	
CEN Readings	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018		11-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	
Cyanide Comp/Free/Total/Thiocyanate	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
Dissolved Metals by ICP-MS	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018		11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	09-Jun-2018	09-Jun-2018	12-Jun-2018	09-Jun-2018		08-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	
EPH CWG (Aliphatic) GC (S)	06-Jun-2018	06-Jun-2018	08-Jun-2018	06-Jun-2018	06-Jun-2018	07-Jun-2018	06-Jun-2018	08-Jun-2018	06-Jun-2018	06-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	09-Jun-2018	09-Jun-2018	12-Jun-2018	09-Jun-2018		08-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	
EPH CWG (Aromatic) GC (S)	06-Jun-2018	06-Jun-2018	07-Jun-2018	06-Jun-2018	06-Jun-2018	07-Jun-2018	06-Jun-2018	07-Jun-2018	06-Jun-2018	06-Jun-2018
GRO by GC-FID (S)	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018
GRO by GC-FID (W)	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018		08-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018	
Mercury Dissolved	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018		07-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	
Metals in solid samples by OES	11-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018	06-Jun-2018
PAH by GCMS	08-Jun-2018	08-Jun-2018	05-Jun-2018	06-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	07-Jun-2018	05-Jun-2018	08-Jun-2018
PAH Spec MS - Aqueous (W)	08-Jun-2018	08-Jun-2018		08-Jun-2018		07-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	
pH	11-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018
pH Value	11-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018		11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	
Phenols by HPLC (S)	07-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018
Sample description	03-Jun-2018	03-Jun-2018	04-Jun-2018	04-Jun-2018	03-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018	03-Jun-2018	03-Jun-2018
Total Organic Carbon	07-Jun-2018	07-Jun-2018	11-Jun-2018	08-Jun-2018	06-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018
Total Sulphate	05-Jun-2018		06-Jun-2018			05-Jun-2018	07-Jun-2018		07-Jun-2018	
Total Sulphur	08-Jun-2018		11-Jun-2018			08-Jun-2018	08-Jun-2018		08-Jun-2018	
TPH CWG (W)	09-Jun-2018	09-Jun-2018	12-Jun-2018	09-Jun-2018		08-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	
TPH CWG GC (S)	06-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018	08-Jun-2018	08-Jun-2018	07-Jun-2018
VOC MS (S)	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018

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CERTIFICATE OF ANALYSIS

SDG:	180602-44	**Client Reference:**		**Report Number:**	460673
Location:	Llanwern	**Order Number:**	LLA439	**Superseded Report:**	460652

Lab Sample No(s)	17671303	17671503	17671307	17671406	17671411
Customer Sample Ref.	40A-N28	40A-N28	40A-N28-V	40A-O28	40A-O28-V
AGS Ref.					
Depth	1.00	0.50	1.20	0.70	1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	07-Jun-2018			07-Jun-2018	
Ammoniacal Nitrogen	11-Jun-2018	11-Jun-2018		11-Jun-2018	
Ammonium Soil by Titration	08-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018
Anions by Kone (soil)	08-Jun-2018			08-Jun-2018	
Asbestos fibres in Soil*	18-Jun-2018			18-Jun-2018	
Asbestos Quantification - Full*				18-Jun-2018	
CEN 10:1 Leachate (1 Stage)	05-Jun-2018	05-Jun-2018		04-Jun-2018	
CEN Readings	07-Jun-2018	07-Jun-2018		07-Jun-2018	
Cyanide Comp/Free/Total/Thiocyanate	08-Jun-2018	12-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
Dissolved Metals by ICP-MS	11-Jun-2018	11-Jun-2018		11-Jun-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	09-Jun-2018	08-Jun-2018		08-Jun-2018	
EPH CWG (Aliphatic) GC (S)	06-Jun-2018	06-Jun-2018	07-Jun-2018	08-Jun-2018	06-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	09-Jun-2018	08-Jun-2018		08-Jun-2018	
EPH CWG (Aromatic) GC (S)	06-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018
GRO by GC-FID (S)	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018
GRO by GC-FID (W)	08-Jun-2018	08-Jun-2018		11-Jun-2018	
Mercury Dissolved	08-Jun-2018	08-Jun-2018		07-Jun-2018	
Metals in solid samples by OES	11-Jun-2018	08-Jun-2018	06-Jun-2018	11-Jun-2018	07-Jun-2018
PAH by GCMS	07-Jun-2018	07-Jun-2018	05-Jun-2018	06-Jun-2018	08-Jun-2018
PAH Spec MS - Aqueous (W)	08-Jun-2018	08-Jun-2018		08-Jun-2018	
pH	12-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018
pH Value	11-Jun-2018	08-Jun-2018		11-Jun-2018	
Phenols by HPLC (S)	07-Jun-2018	08-Jun-2018	07-Jun-2018	08-Jun-2018	08-Jun-2018
Sample description	04-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018	03-Jun-2018
Total Organic Carbon	07-Jun-2018	08-Jun-2018	06-Jun-2018	11-Jun-2018	06-Jun-2018
Total Sulphate	07-Jun-2018			06-Jun-2018	
Total Sulphur	11-Jun-2018			08-Jun-2018	
TPH CWG (W)	09-Jun-2018	08-Jun-2018		11-Jun-2018	
TPH CWG GC (S)	06-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018
VOC MS (S)	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
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Suite 24
Coed Darcy
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Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	18 June 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180604-4
Your Reference:	
Location:	Llanwern
Report No:	460640

This report has been revised and directly supersedes 460481 in its entirety.

We received 41 samples on Monday June 04, 2018 and 41 of these samples were scheduled for analysis which was completed on Friday June 15, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17676298	TP3B-C1		0.50 - 0.50	01/06/2018
17676302	TP3B-C1		1.00 - 1.00	01/06/2018
17676309	TP3B-C1		2.00 - 2.00	01/06/2018
17676319	TP3B-C1		3.00 - 3.00	01/06/2018
17676328	TP3B-C2		0.30 - 0.30	01/06/2018
17676332	TP3B-C2		1.00 - 1.00	01/06/2018
17676342	TP3B-C2		2.00 - 2.00	01/06/2018
17676346	TP3B-C2		3.50 - 3.50	01/06/2018
17676355	TP3B-C3		0.50 - 0.50	01/06/2018
17676360	TP3B-C3		1.00 - 1.00	01/06/2018
17676366	TP3B-C3		2.00 - 2.00	01/06/2018
17676376	TP3B-C3		3.00 - 3.00	01/06/2018
17676324	TP3B-C1-V		4.10 - 4.10	01/06/2018
17676350	TP3B-C2-V		3.80 - 3.80	01/06/2018
17676380	TP3B-C3-V		3.30 - 3.30	01/06/2018
17676384	TP3B-D1		0.40 - 0.40	01/06/2018
17676388	TP3B-D1		1.00 - 1.00	01/06/2018
17676398	TP3B-D1		2.00 - 2.00	01/06/2018
17676223	TP3B-D2		0.40 - 0.40	01/06/2018
17676231	TP3B-D2		1.00 - 1.00	01/06/2018
17676235	TP3B-D2		2.00 - 2.00	01/06/2018
17676239	TP3B-D2		2.80 - 2.80	01/06/2018
17676272	TP3B-D3		0.30 - 0.30	01/06/2018
17676278	TP3B-D3		1.00 - 1.00	01/06/2018
17676285	TP3B-D3		2.00 - 2.00	01/06/2018
17676402	TP3B-D1-V		2.60 - 2.60	01/06/2018
17676244	TP3B-D2-V		3.00 - 3.00	01/06/2018
17676294	TP3B-D3-V		2.40 - 2.40	01/06/2018
17676203	TP3B-E1		0.50 - 0.50	01/06/2018
17676254	TP3B-E1		1.00 - 1.00	01/06/2018
17676314	TP3B-E1		2.00 - 2.00	01/06/2018
17676406	TP3B-E2		0.50 - 0.50	01/06/2018
17676207	TP3B-E2		1.00 - 1.00	01/06/2018
17676211	TP3B-E2		2.00 - 2.00	01/06/2018
17676215	TP3B-E2		2.90 - 2.90	01/06/2018
17676249	TP3B-E3		0.50 - 0.50	01/06/2018
17676258	TP3B-E3		1.00 - 1.00	01/06/2018
17676263	TP3B-E3		2.00 - 2.00	01/06/2018
17676370	TP3B-E1-V		2.20 - 2.20	01/06/2018
17676219	TP3B-E2-V		3.00 - 3.00	01/06/2018
17676267	TP3B-E3-V		2.30 - 2.30	01/06/2018

Maximum Sample/Coolbox Temperature (°C) : **16**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	17676298			17676302			17676309			17676319			17676328			17676332			17676342
			Customer Sample Reference	TP3B-C1			TP3B-C1			TP3B-C1			TP3B-C1			TP3B-C2			TP3B-C2			TP3B-C2
			AGS Reference																			
			Depth (m)	0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			3.00 - 3.00			0.30 - 0.30			1.00 - 1.00			2.00 - 2.00
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 16			X						X						X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 16			X						X						X					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16		X						X						X						X
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3																				
CEN Readings	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 73		X	X		X	X		X	X		X	X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41				X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X

17676350	TP3B-C2-V		3.80 - 3.80	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
17676324	TP3B-C1-V		4.10 - 4.10	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
17676376	TP3B-C3		3.00 - 3.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X			X					X
17676366	TP3B-C3		2.00 - 2.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X	X	X	X	X	X			X					X
17676360	TP3B-C3		1.00 - 1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X			X					X
17676355	TP3B-C3		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X		X	X	X	X			X					X
17676346	TP3B-C2		3.50 - 3.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X			X					X
17676342	TP3B-C2		2.00 - 2.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	17676298			17676302			17676309			17676319			17676328			17676332			17676342
			Customer Sample Reference	TP3B-C1			TP3B-C1			TP3B-C1			TP3B-C1			TP3B-C2			TP3B-C2			TP3B-C2
			AGS Reference																			
			Depth (m)	0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			3.00 - 3.00			0.30 - 0.30			1.00 - 1.00			2.00 - 2.00
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
pH	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
Sample description	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 16			X						X						X					
Total Sulphur	All	NDPs: 0 Tests: 16			X						X						X					
TPH CWG (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 42				X			X			X			X			X			X		

| 17676350 | TP3B-C2-V | | 3.80 - 3.80 | 60g VOC (ALE215) | S | | |

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	17676380	17676384	17676388	17676398	17676223	17676231	17676235
			Customer Sample Reference	TP3B-C3-V	TP3B-D1	TP3B-D1	TP3B-D1	TP3B-D2	TP3B-D2	TP3B-D2
			AGS Reference							
			Depth (m)	3.30 - 3.30	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00
			Container	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 16						X					X									X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 32			X			X			X			X			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 16						X					X									X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16					X					X									X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3																				
CEN Readings	All	NDPs: 0 Tests: 32			X		X			X			X			X			X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 73	X		X	X	X	X		X	X		X	X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 32			X		X			X			X			X			X			
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32			X		X			X			X			X			X			
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32			X		X			X			X			X			X			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41		X			X			X			X			X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 32			X		X			X			X			X			X			

17676203	TP3B-E1		0.50 - 0.50	250g Amber Jar (ALE210)	S		x			x		x					x				x				x	
				1kg TUB	S			x					x			x		x		x			x			x
17676294	TP3B-D3-V		2.40 - 2.40	60g VOC (ALE215)	S																				x	
				250g Amber Jar (ALE210)	S					x							x				x						
17676244	TP3B-D2-V		3.00 - 3.00	60g VOC (ALE215)	S																				x	
				250g Amber Jar (ALE210)	S					x							x				x						
17676402	TP3B-D1-V		2.60 - 2.60	60g VOC (ALE215)	S																				x	
				250g Amber Jar (ALE210)	S					x							x				x						
17676285	TP3B-D3		2.00 - 2.00	60g VOC (ALE215)	S																				x	
				250g Amber Jar (ALE210)	S					x							x				x						
				1kg TUB	S			x						x		x		x		x			x			x
17676278	TP3B-D3		1.00 - 1.00	60g VOC (ALE215)	S																				x	
				250g Amber Jar (ALE210)	S		x			x		x					x				x						
				1kg TUB	S			x				x		x		x		x		x			x			x
17676272	TP3B-D3		0.30 - 0.30	60g VOC (ALE215)	S																				x	
				250g Amber Jar (ALE210)	S					x							x				x						
				1kg TUB	S			x						x		x		x		x			x			x
17676239	TP3B-D2		2.80 - 2.80	60g VOC (ALE215)	S																				x	
				250g Amber Jar (ALE210)	S					x							x				x						
				1kg TUB	S			x						x		x		x		x			x			x
17676235	TP3B-D2		2.00 - 2.00	60g VOC (ALE215)	S																				x	

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	17676380	17676384	17676388	17676398	17676223	17676231	17676235
			Customer Sample Reference	TP3B-C3-V	TP3B-D1	TP3B-D1	TP3B-D1	TP3B-D2	TP3B-D2	TP3B-D2
			AGS Reference							
			Depth (m)	3.30 - 3.30	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00
			Container	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 32			X			X			X			X			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 32			X			X			X			X			X			X		
pH	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
pH Value	All	NDPs: 0 Tests: 32			X			X			X			X			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
Sample description	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 16						X						X							X	
Total Sulphur	All	NDPs: 0 Tests: 16						X						X							X	
TPH CWG (W)	All	NDPs: 0 Tests: 32			X			X			X			X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 42		X			X			X			X			X			X				

17676203	TP3B-E1		0.50 - 0.50	250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x	
				1kg TUB	S	x			x		x							x		
17676294	TP3B-D3-V		2.40 - 2.40	60g VOC (ALE215)	S															x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
17676244	TP3B-D2-V		3.00 - 3.00	60g VOC (ALE215)	S															x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
17676402	TP3B-D1-V		2.60 - 2.60	60g VOC (ALE215)	S															x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
17676285	TP3B-D3		2.00 - 2.00	60g VOC (ALE215)	S															x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
				1kg TUB	S	x			x		x							x		
17676278	TP3B-D3		1.00 - 1.00	60g VOC (ALE215)	S															x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x	
				1kg TUB	S	x			x		x							x		
17676272	TP3B-D3		0.30 - 0.30	60g VOC (ALE215)	S															x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
				1kg TUB	S	x			x		x							x		
17676239	TP3B-D2		2.80 - 2.80	60g VOC (ALE215)	S															x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
				1kg TUB	S	x			x		x							x		
17676235	TP3B-D2		2.00 - 2.00	60g VOC (ALE215)	S															x

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17676203	17676254			17676314			17676406			17676207			17676211			17676215		
Customer Sample Reference			TP3B-E1	TP3B-E1			TP3B-E1			TP3B-E2			TP3B-E2			TP3B-E2			TP3B-E2		
AGS Reference																					
Depth (m)			0.50 - 0.50	1.00 - 1.00			2.00 - 2.00			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			2.90 - 2.90		
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 16						X			X						X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 16						X			X						X					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16					X			X						X						
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3								X												
CEN Readings	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 73		X	X		X	X		X	X		X	X		X	X		X	X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X				X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			

17676267	TP3B-E3-V		2.30 - 2.30	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
17676219	TP3B-E2-V		3.00 - 3.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
17676370	TP3B-E1-V		2.20 - 2.20	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
17676263	TP3B-E3		2.00 - 2.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X		X	X	X	X			X					X
17676258	TP3B-E3		1.00 - 1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X			X					X
17676249	TP3B-E3		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X		X	X	X	X			X					X

Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**	**Report Number:** 460640
Location:	Llanwern	**Order Number:** LLA441	**Superseded Report:** 460481

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17676203	17676254			17676314			17676406			17676207			17676211			17676215	
Customer Sample Reference			TP3B-E1	TP3B-E1			TP3B-E1			TP3B-E2			TP3B-E2			TP3B-E2			TP3B-E2	
AGS Reference																				
Depth (m)			0.50 - 0.50	1.00 - 1.00			2.00 - 2.00			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			2.90 - 2.90	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 32		X			X			X			X			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X		
pH	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
pH Value	All	NDPs: 0 Tests: 32		X			X			X			X			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
Sample description	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 16						X			X						X				
Total Sulphur	All	NDPs: 0 Tests: 16						X			X						X				
TPH CWG (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 42	X			X			X			X			X		X	X			X

| 17676267 | TP3B-E3-V | | 2.30 - 2.30 | 60g VOC (ALE215) | S | | |

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17676298	TP3B-C1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17676302	TP3B-C1	1.00 - 1.00	Dark Brown	Loamy Sand	Crushed Brick	Stones
17676309	TP3B-C1	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Vegetation
17676319	TP3B-C1	3.00 - 3.00	Dark Brown	Loamy Sand	Crushed Brick	Stones
17676328	TP3B-C2	0.30 - 0.30	Black	Loamy Sand	Stones	None
17676332	TP3B-C2	1.00 - 1.00	Black	Loamy Sand	Stones	None
17676342	TP3B-C2	2.00 - 2.00	Dark Brown	Silt Loam	Stones	None
17676346	TP3B-C2	3.50 - 3.50	Dark Brown	Silt Loam	Stones	None
17676355	TP3B-C3	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17676360	TP3B-C3	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	None
17676366	TP3B-C3	2.00 - 2.00	Black	Stone/Soil	Stones	None
17676376	TP3B-C3	3.00 - 3.00	Dark Brown	Loamy Sand	Crushed Brick	Stones
17676324	TP3B-C1-V	4.10 - 4.10	Dark Brown	Sandy Clay Loam	Stones	Vegetation
17676350	TP3B-C2-V	3.80 - 3.80	Dark Brown	Loamy Sand	Stones	Vegetation
17676380	TP3B-C3-V	3.30 - 3.30	Dark Brown	Loamy Sand	Vegetation	None
17676384	TP3B-D1	0.40 - 0.40	Black	Sand	Stones	None
17676388	TP3B-D1	1.00 - 1.00	Black	Sand	Stones	None
17676398	TP3B-D1	2.00 - 2.00	Black	Loamy Sand	Crushed Brick	Stones
17676223	TP3B-D2	0.40 - 0.40	Dark Brown	Loamy Sand	Stones	None
17676231	TP3B-D2	1.00 - 1.00	Black	Loamy Sand	Crushed Brick	Stones
17676235	TP3B-D2	2.00 - 2.00	Dark Brown	Stone/Soil	Stones	None
17676239	TP3B-D2	2.80 - 2.80	Dark Brown	Loamy Sand	Stones	Vegetation
17676272	TP3B-D3	0.30 - 0.30	Black	Silt Loam	Stones	None
17676278	TP3B-D3	1.00 - 1.00	Dark Brown	Sand	None	Stones
17676285	TP3B-D3	2.00 - 2.00	Dark Brown	Sand	Stones	Vegetation
17676402	TP3B-D1-V	2.60 - 2.60	Dark Brown	Sandy Clay Loam	Stones	Vegetation
17676244	TP3B-D2-V	3.00 - 3.00	Dark Brown	Loamy Sand	Stones	Vegetation
17676294	TP3B-D3-V	2.40 - 2.40	Black	Silt Loam	Vegetation	None
17676203	TP3B-E1	0.50 - 0.50	Black	Loamy Sand	Crushed Brick	Stones
17676254	TP3B-E1	1.00 - 1.00	Black	Loamy Sand	Stones	Vegetation
17676314	TP3B-E1	2.00 - 2.00	Dark Brown	Stone/Soil	Stones	None
17676207	TP3B-E2	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
17676211	TP3B-E2	2.00 - 2.00	Dark Brown	Sand	Stones	Vegetation
17676215	TP3B-E2	2.90 - 2.90	Dark Brown	Loamy Sand	Stones	Vegetation
17676406	TP3B-E2	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17676249	TP3B-E3	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
17676258	TP3B-E3	1.00 - 1.00	Dark Brown	Sand	Stones	None
17676263	TP3B-E3	2.00 - 2.00	Dark Brown	Stone/Soil	Stones	None

			Colour	Description	Inclusions	Inclusions 2
17676370	TP3B-E1-V	2.20 - 2.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
17676219	TP3B-E2-V	3.00 - 3.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
17676267	TP3B-E3-V	2.30 - 2.30	Dark Brown	Sandy Clay Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C2	TP3B-C2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676298	17676302	17676309	17676319	17676328	17676332
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		4.7	0	4.8	12	6.9	6.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.02 M	0.0105 M	<0.01 M	0.0107 M	0.0107 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0107 M	0.0107 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.182		0.32		0.229	
Sulphate, Total potential	<0.06 %	TM132		0.546		0.96		0.687	
Soil Organic Matter (SOM)	<0.35 %	TM132		2.69 #	3.31 #	1.57 #	5.02 #	5.36 #	9.09 #
pH	1 pH Units	TM133		9.88 M	12.7 M	12.8 M	10.9 M	12.6 M	12.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	1.36 M	5.84 M	<1 M
Arsenic	<0.6 mg/kg	TM181		15.5 M	<6 M	43.7 M	7.2 M	2.07 M	2.25 M
Cadmium	<0.02 mg/kg	TM181		1.11 M	0.907 M	1.18 M	0.407 M	0.471 M	0.716 M
Chromium	<0.9 mg/kg	TM181		<0.9 M	401 M	279 M	132 M	374 M	337 M
Copper	<1.4 mg/kg	TM181		17.5 M	<14 M	85.9 M	26.8 M	6.22 M	8.84 M
Iron	<1000 mg/kg	TM181		233000 #	169000 #	134000 #	58000 #	139000 #	137000 #
Lead	<0.7 mg/kg	TM181		36.4 M	29.3 M	58 M	20.2 M	17.7 M	6.8 M
Manganese	<0.13 mg/kg	TM181		7950 M	24800 M	43800 M	11200 M	24600 M	33500 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		19.1 M	13.2 M	11.7 M	10.7 M	4.11 M	1.9 M
Selenium	<1 mg/kg	TM181		2.32 #	11.3 #	13 #	5.39 #	7.54 #	12 #
Vanadium	<0.2 mg/kg	TM181		129 #	374 #	932 #	161 #	281 #	1940 #
Zinc	<1.9 mg/kg	TM181		121 M	237 M	139 M	48.4 M	69.7 M	16.2 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.304		0.593		0.441	
Calcium	<21 mg/kg	TM224		75300		193000		201000	
Magnesium	<8 mg/kg	TM224		13300		36900		35600	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.324 M		<0.004 M		<0.004 M	

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C2	TP3B-C2	TP3B-C3	TP3B-C3	TP3B-C3	TP3B-C3
			Depth (m)	2.00 - 2.00	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676342	17676346	17676355	17676360	17676366	17676376
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		16	28	7.1	7.2	4.5	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		70.3 M	<12 M	<12 M	<12 #	<12 #	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0119 M	0.476 M	<0.05 M	0.0108 #	<0.05 #	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.014 M	<0.05 M	<0.01 #	<0.05 #	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.075 M	<0.015 #	<0.075 #	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.49 M	<0.035 M	<0.035 #	<0.035 #	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.202		0.229		0.338	
Sulphate, Total potential	<0.06 %	TM132		0.606		0.687		1.01	
Soil Organic Matter (SOM)	<0.35 %	TM132		3.05 #	3.84 #	5.91 #	1.34 #	4.81 #	5.53 #
pH	1 pH Units	TM133		9.07 M	9.61 M	11.7 M	12.1 #	12.3 #	11 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	2.24 M	2.28 #	<1 #	<1 M
Arsenic	<0.6 mg/kg	TM181		9.71 M	8.56 M	9.35 M	<6 #	2.74 #	5.49 M
Cadmium	<0.02 mg/kg	TM181		0.474 M	0.566 M	1.21 M	0.674 #	0.631 #	0.359 M
Chromium	<0.9 mg/kg	TM181		15.7 M	26.4 M	335 M	409 #	293 #	79.1 M
Copper	<1.4 mg/kg	TM181		13.6 M	14.2 M	20 M	<14 #	11.9 #	11 M
Iron	<1000 mg/kg	TM181		83800 #	89500 #	211000 #	151000 #	130000 #	64000 #
Lead	<0.7 mg/kg	TM181		21.4 M	22.2 M	42.9 M	14.7 #	9.53 #	14.2 M
Manganese	<0.13 mg/kg	TM181		2970 M	3240 M	20000 M	40900 #	33300 #	9590 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<1.4 #	<0.14 #	<0.14 M
Nickel	<0.2 mg/kg	TM181		17.2 M	26.1 M	28.9 M	2.83 #	2.58 #	12.6 M
Selenium	<1 mg/kg	TM181		1.48 #	1.99 #	<10 #	18.2 #	10.6 #	5.11 #
Vanadium	<0.2 mg/kg	TM181		97.8 #	124 #	647 #	2010 #	1580 #	341 #
Zinc	<1.9 mg/kg	TM181		72.2 M	92.4 M	134 M	28 #	28.6 #	53.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.145		0.425		0.535	
Calcium	<21 mg/kg	TM224		53700		172000		217000	
Magnesium	<8 mg/kg	TM224		7050		19200		15800	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0742 M		0.077 M		0.0229 #	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						No #	
Analysts Comments		TM304						0	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1-V	TP3B-C2-V	TP3B-C3-V	TP3B-D1	TP3B-D1	TP3B-D1
			Depth (m)	4.10 - 4.10	3.80 - 3.80	3.30 - 3.30	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676324	17676350	17676380	17676384	17676388	17676398
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		23	33	35	9.1	7.1	2.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		239 M	279 M	216 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0646 M	0.0204 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.226 M	0.0511 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.162 M	0.0307 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.452 M	0.102 M
Sulphur, Total	<0.02 %	TM132						0.276	
Sulphate, Total potential	<0.06 %	TM132						0.828	
Soil Organic Matter (SOM)	<0.35 %	TM132		5.14 #	5.19 #	6.48 #	1.33 #	13.4 #	12.6 #
pH	1 pH Units	TM133		7.48 M	7.2 M	7.33 M	12.2 M	11.9 M	11.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	2.47 M	<1 M	1.23 M
Arsenic	<0.6 mg/kg	TM181		12.7 M	12.2 M	12.8 M	<6 M	11.6 M	7.99 M
Cadmium	<0.02 mg/kg	TM181		0.407 M	0.288 M	0.664 M	0.802 M	2.06 M	0.895 M
Chromium	<0.9 mg/kg	TM181		33 M	34.3 M	31.8 M	455 M	41.9 M	151 M
Copper	<1.4 mg/kg	TM181		16.2 M	15.3 M	16.1 M	<14 M	16.9 M	8.88 M
Iron	<1000 mg/kg	TM181		20700 #	30600 #	32700 #	165000 #	292000 #	173000 #
Lead	<0.7 mg/kg	TM181		35.6 M	29.5 M	46.3 M	12 M	23.5 M	11.9 M
Manganese	<0.13 mg/kg	TM181		196 M	200 M	481 M	31500 M	12200 M	21400 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		23.6 M	25.4 M	28.1 M	9.25 M	54.7 M	13 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	14.1 #	<10 #	6.96 #
Vanadium	<0.2 mg/kg	TM181		54.5 #	57 #	65.4 #	432 #	688 #	885 #
Zinc	<1.9 mg/kg	TM181		124 M	118 M	172 M	58.5 M	74.9 M	53 M
Sulphate, acid soluble (total)	<0.02 %	TM221						0.495	
Calcium	<21 mg/kg	TM224						82600	
Magnesium	<8 mg/kg	TM224						5730	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243						0.041 M	

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D3	TP3B-D3
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	2.80 - 2.80	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676223	17676231	17676235	17676239	17676272	17676278
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.5	5.6	8.3	21	32	7.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	82 M	23 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.05 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	0.0217 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.05 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	0.0326 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.075 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M	0.0326 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M	0.0868 M
Sulphur, Total	<0.02 %	TM132		0.276		0.222			0.439
Sulphate, Total potential	<0.06 %	TM132		0.828		0.666			1.32
Soil Organic Matter (SOM)	<0.35 %	TM132		11.5 #	7.15 #	2.83 #	6.69 #	20 #	29 #
pH	1 pH Units	TM133		12.1 M	11.9 M	11.9 #	8.25 M	7.9 M	11.5 M
Cyanide, Total	<1 mg/kg	TM153		2.57 M	1.28 M	1.34 #	11.6 M	89.9 M	2.59 M
Arsenic	<0.6 mg/kg	TM181		<6 M	3.14 M	<6 #	12.6 M	34.1 M	7.87 M
Cadmium	<0.02 mg/kg	TM181		0.738 M	0.689 M	0.615 #	4.11 M	17.3 M	1.08 M
Chromium	<0.9 mg/kg	TM181		480 M	243 M	401 #	121 M	<0.9 M	210 M
Copper	<1.4 mg/kg	TM181		<14 M	9.6 M	<14 #	21.7 M	49.9 M	17.7 M
Iron	<1000 mg/kg	TM181		131000 #	121000 #	123000 #	100000 #	243000 #	139000 #
Lead	<0.7 mg/kg	TM181		20.5 M	38.4 M	13 #	736 M	4220 M	64.8 M
Manganese	<0.13 mg/kg	TM181		23000 M	25400 M	42100 #	6120 M	7520 M	24400 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 #	<0.14 M	1.24 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		8.06 M	5.21 M	4.18 #	20.1 M	23.7 M	18.7 M
Selenium	<1 mg/kg	TM181		11.7 #	9.1 #	18.3 #	3.88 #	5.07 #	10.6 #
Vanadium	<0.2 mg/kg	TM181		499 #	339 #	2880 #	124 #	69.4 #	1600 #
Zinc	<1.9 mg/kg	TM181		78.4 M	136 M	<19 #	1530 M	11900 M	121 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.647		0.587			1.06
Calcium	<21 mg/kg	TM224		183000		259000			150000
Magnesium	<8 mg/kg	TM224		40600		10900			16600
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0287 M		0.0389 #			0.151 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							N/A
Asbestos Quantification - Total - %	<0.001 %	TM304							<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	TP3B-D3	TP3B-D1-V	TP3B-D2-V	TP3B-D3-V	TP3B-E1	TP3B-E1
Depth (m)	2.00 - 2.00	2.60 - 2.60	3.00 - 3.00	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
Lab Sample No.(s)	17676285	17676402	17676244	17676294	17676203	17676254
AGS Reference						

Component	LOD/Units	Method											
Moisture Content Ratio (% of as received sample)	%	PM024	12		19		40		29		0.68		3.8	
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M	284	M	261	M	147	M	<12	M	<12	M
Phenol	<0.01 mg/kg	TM062 (S)	0.17	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M
Cresols	<0.01 mg/kg	TM062 (S)	0.283	M	<0.01	M	0.0167	M	<0.01	M	<0.01	M	<0.01	M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.15	M	<0.015	M	<0.015	M	<0.015	M	<0.015	M	<0.015	M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	0.452	M	<0.035	M	<0.035	M	<0.035	M	<0.035	M	<0.035	M
Sulphur, Total	<0.02 %	TM132									0.307			
Sulphate, Total potential	<0.06 %	TM132									0.921			
Soil Organic Matter (SOM)	<0.35 %	TM132	17.9	#	3.43	#	9.02	#	3.91	#	1.28	#	5.6	#
pH	1 pH Units	TM133	10.9	M	7.23	M	6.98	M	7.09	M	11.6	M	11.7	M
Cyanide, Total	<1 mg/kg	TM153	9.11	M	<1	M	<1	M	<1	M	<1	M	5.91	M
Arsenic	<0.6 mg/kg	TM181	6.56	M	11.4	M	15.7	M	9.69	M	3.78	M	2.77	M
Cadmium	<0.02 mg/kg	TM181	1.14	M	0.343	M	1.24	M	0.309	M	0.842	M	0.764	M
Chromium	<0.9 mg/kg	TM181	153	M	30.9	M	54.6	M	35.2	M	269	M	313	M
Copper	<1.4 mg/kg	TM181	<14	M	16.9	M	22.7	M	15	M	12.2	M	12.3	M
Iron	<1000 mg/kg	TM181	133000	#	29600	#	25500	#	29600	#	160000	#	136000	#
Lead	<0.7 mg/kg	TM181	41.8	M	28.7	M	66.7	M	36.7	M	17	M	17.7	M
Manganese	<0.13 mg/kg	TM181	17300	M	282	M	1220	M	239	M	36400	M	37600	M
Mercury	<0.14 mg/kg	TM181	<1.4	M	<0.14	M	<0.14	M	<0.14	M	<0.14	M	<0.14	M
Nickel	<0.2 mg/kg	TM181	13.3	M	25.7	M	26.7	M	26.2	M	162	M	5.45	M
Selenium	<1 mg/kg	TM181	<10	#	<1	#	1.79	#	<1	#	11.1	#	12	#
Vanadium	<0.2 mg/kg	TM181	1060	#	50.7	#	98.5	#	55.5	#	2180	#	1550	#
Zinc	<1.9 mg/kg	TM181	104	M	137	M	209	M	132	M	46.4	M	53.6	M
Sulphate, acid soluble (total)	<0.02 %	TM221									0.497			
Calcium	<21 mg/kg	TM224									208000			
Magnesium	<8 mg/kg	TM224									14900			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243									0.0948	M		

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E1	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E3
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676314	17676406	17676207	17676211	17676215	17676249
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.9	10	11	12	16	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.05 #	0.0224 M	0.0112 M	0.339 M	0.024 M	0.0336 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.05 #	0.0448 M	0.056 M	0.0113 M	0.204 M	0.0672 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.075 #	<0.015 M	<0.015 M	<0.015 M	0.024 M	0.0784 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	0.0672 M	0.0672 M	0.35 M	0.252 M	0.179 M
Sulphur, Total	<0.02 %	TM132		0.403	0.279		0.356		0.289
Sulphate, Total potential	<0.06 %	TM132		1.21	0.837		1.07		0.867
Soil Organic Matter (SOM)	<0.35 %	TM132		2.6 #	26.7 #	29.7 #	58.1 #	47.8 #	52.2 #
pH	1 pH Units	TM133		10.7 #	11.9 M	11.6 M	9.82 M	10.1 M	10.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 #	2.29 M	2.9 M	3.06 M	7.4 M	5.44 M
Arsenic	<0.6 mg/kg	TM181		<6 #	3.34 M	<6 M	<6 M	5.44 M	9.36 M
Cadmium	<0.02 mg/kg	TM181		0.846 #	<0.02 M	0.809 M	0.895 M	0.421 M	0.727 M
Chromium	<0.9 mg/kg	TM181		399 #	60.9 M	245 M	373 M	161 M	35.9 M
Copper	<1.4 mg/kg	TM181		14.7 #	4.28 M	24.5 M	<14 M	15.3 M	31.1 M
Iron	<1000 mg/kg	TM181		149000 #	86300 #	105000 #	161000 #	80500 #	63400 #
Lead	<0.7 mg/kg	TM181		31.7 #	8.62 M	21.4 M	19.6 M	27.7 M	66 M
Manganese	<0.13 mg/kg	TM181		44100 #	9240 M	18700 M	29000 M	12900 M	3660 M
Mercury	<0.14 mg/kg	TM181		<1.4 #	<0.14 M	<1.4 M	<1.4 M	0.569 M	1.58 M
Nickel	<0.2 mg/kg	TM181		6.36 #	7.45 M	11.8 M	5.25 M	12.7 M	19 M
Selenium	<1 mg/kg	TM181		19.8 #	3.44 #	<10 #	12.1 #	5.1 #	1.93 #
Vanadium	<0.2 mg/kg	TM181		2410 #	254 #	779 #	449 #	311 #	86.8 #
Zinc	<1.9 mg/kg	TM181		52.5 #	46.9 M	62.6 M	69.6 M	106 M	230 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.567	0.758		0.303		0.359
Calcium	<21 mg/kg	TM224		233000	138000		196000		76600
Magnesium	<8 mg/kg	TM224		12100	26600		28500		8790
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0496 #	0.117 M		0.0959 M		0.154 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			No #				
Analysts Comments		TM304			0				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E3	TP3B-E3	TP3B-E1-V	TP3B-E2-V	TP3B-E3-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	2.20 - 2.20	3.00 - 3.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676258	17676263	17676370	17676219	17676267
			AGS Reference					
Moisture Content Ratio (% of as received sample)	%	PM024		6.8	9.5	27	6.2	26
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	317 M	135 M	178 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.1 M	0.011 #	<0.05 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.1 M	0.033 #	<0.05 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.15 M	0.033 #	<0.075 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.077 #	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.269			
Sulphate, Total potential	<0.06 %	TM132			0.807			
Soil Organic Matter (SOM)	<0.35 %	TM132		17.4 #	10.5 #	4.79 #	2.47 #	2.71 #
pH	1 pH Units	TM133		11.2 M	11.7 #	7.32 M	7.49 M	7.46 M
Cyanide, Total	<1 mg/kg	TM153		4.18 M	5.55 #	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		2.58 M	<6 #	12.1 M	11.6 M	10.3 M
Cadmium	<0.02 mg/kg	TM181		0.416 M	1.32 #	0.261 M	0.17 M	0.246 M
Chromium	<0.9 mg/kg	TM181		178 M	222 #	28.4 M	32.2 M	37.4 M
Copper	<1.4 mg/kg	TM181		11.1 M	20.4 #	20.8 M	19.6 M	15.4 M
Iron	<1000 mg/kg	TM181		69000 #	140000 #	31000 #	28200 #	29700 #
Lead	<0.7 mg/kg	TM181		9.68 M	55.5 #	28.2 M	25.8 M	26.6 M
Manganese	<0.13 mg/kg	TM181		25700 M	26900 #	461 M	448 M	280 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 #	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		7.81 M	12.7 #	25.9 M	27.2 M	30.1 M
Selenium	<1 mg/kg	TM181		10.8 #	<10 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		1890 #	1400 #	49.2 #	52.7 #	60 #
Zinc	<1.9 mg/kg	TM181		42.7 M	118 #	129 M	119 M	126 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.448			
Calcium	<21 mg/kg	TM224			186000			
Magnesium	<8 mg/kg	TM224			12900			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0857 #			

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C2	TP3B-C2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676298	17676302	17676309	17676319	17676328	17676332
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.1	84.7	93.4	93.1	91	88.4
Acenaphthene-d10 % recovery**	%	TM218		89.2	90.6	93.3	86.2	91	91.1
Phenanthrene-d10 % recovery**	%	TM218		88.8	86.4	91.5	84.8	89.5	88.9
Chrysene-d12 % recovery**	%	TM218		85	84.7	89.7	89	91.8	86.3
Perylene-d12 % recovery**	%	TM218		82.1	83.4	100	101	99.7	81.9
Naphthalene	<0.009 mg/kg	TM218		0.162 M	12.7 M	1.27 M	2.81 M	7.48 M	26 M
Acenaphthylene	<0.012 mg/kg	TM218		0.181 M	5.14 M	0.0456 M	0.275 M	3.18 M	2.71 M
Acenaphthene	<0.008 mg/kg	TM218		0.0229 M	0.609 M	0.172 M	0.0694 M	0.254 M	0.244 M
Fluorene	<0.01 mg/kg	TM218		0.0683 M	3.17 M	0.0368 M	0.155 M	2.94 M	1.76 M
Phenanthrene	<0.015 mg/kg	TM218		0.58 M	37.4 M	6.53 M	1.28 M	15.8 M	15.4 M
Anthracene	<0.016 mg/kg	TM218		0.245 M	10.9 M	0.745 M	0.506 M	3.51 M	4.16 M
Fluoranthene	<0.017 mg/kg	TM218		2.13 M	56.9 M	11.3 M	2.36 M	18.2 M	16.2 M
Pyrene	<0.015 mg/kg	TM218		1.66 M	38.4 M	9.96 M	1.82 M	14.3 M	11.2 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.992 M	18.5 M	4.79 M	1.03 M	7.67 M	5.61 M
Chrysene	<0.01 mg/kg	TM218		0.945 M	15.2 M	6.64 M	1.08 M	6.63 M	4.52 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.34 M	19.4 M	4.02 M	1.45 M	11 M	6.1 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.446 M	7.81 M	5.28 M	0.534 M	4.34 M	2.54 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.89 M	13.5 M	4.09 M	1.08 M	8.74 M	4.81 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.677 M	10.5 M	3.98 M	1.03 M	7.18 M	3.25 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.171 M	2.29 M	0.929 M	0.235 M	1.71 M	0.771 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.647 M	9.45 M	4.35 M	0.907 M	6.94 M	3.2 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		11.2	262	64.2	16.6	120	109

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C2	TP3B-C2	TP3B-C3	TP3B-C3	TP3B-C3	TP3B-C3
			Depth (m)	2.00 - 2.00	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676342	17676346	17676355	17676360	17676366	17676376
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93	90.2	87.2	85.7	87.8	91.5
Acenaphthene-d10 % recovery**	%	TM218		90.6	95	88.9	87.3	81.2	90.7
Phenanthrene-d10 % recovery**	%	TM218		87.3	98	88.7	89.4	89.2	87.3
Chrysene-d12 % recovery**	%	TM218		84.8	102	85.1	85.2	87.6	82.4
Perylene-d12 % recovery**	%	TM218		92.9	89.5	90	90.2	92.1	77.7
Naphthalene	<0.009 mg/kg	TM218		0.119 M	1.01 M	1.69 M	1.14 #	4.13 #	1.46 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0149 M	0.138 M	0.763 M	0.35 #	1.01 #	0.0623 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0559 M	0.0715 M	0.134 #	0.112 #	0.46 M
Fluorene	<0.01 mg/kg	TM218		0.0196 M	0.259 M	0.347 M	0.198 #	0.377 #	0.469 M
Phenanthrene	<0.015 mg/kg	TM218		0.11 M	2.44 M	2.58 M	1.75 #	5.34 #	4.76 M
Anthracene	<0.016 mg/kg	TM218		0.024 M	1.13 M	0.729 M	0.604 #	1.46 #	1.01 M
Fluoranthene	<0.017 mg/kg	TM218		0.126 M	5.42 M	5.18 M	6.36 #	8.46 #	6.52 M
Pyrene	<0.015 mg/kg	TM218		0.0958 M	4.06 M	4.2 M	5.05 #	6.09 #	5.21 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0561 M	1.65 M	2.21 M	2.22 #	3.07 #	2.44 M
Chrysene	<0.01 mg/kg	TM218		0.0595 M	1.55 M	1.96 M	1.86 #	2.81 #	2.4 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0796 M	1.74 M	3.43 M	3.04 #	4.23 #	2.7 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0253 M	0.673 M	1 M	1.08 #	1.5 #	1.3 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0504 M	1.2 M	2.12 M	2 #	2.8 #	2.3 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0444 M	0.771 M	1.96 M	1.64 #	2.26 #	1.4 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.155 M	0.397 M	0.329 #	0.459 #	0.28 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.042 M	0.672 M	1.69 M	1.48 #	2.07 #	1.42 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.867	22.9	30.3	29.2	46.2	34.2

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1-V	TP3B-C2-V	TP3B-C3-V	TP3B-D1	TP3B-D1	TP3B-D1
			Depth (m)	4.10 - 4.10	3.80 - 3.80	3.30 - 3.30	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676324	17676350	17676380	17676384	17676388	17676398
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.6	86.5	87.2	84.2	85.5	90.9
Acenaphthene-d10 % recovery**	%	TM218		88.2	83.6	82	85.2	85.8	85
Phenanthrene-d10 % recovery**	%	TM218		85.4	91.4	87.6	86.3	85.1	88.4
Chrysene-d12 % recovery**	%	TM218		81.1	82.4	80.1	83.9	78.5	87.5
Perylene-d12 % recovery**	%	TM218		95	79.7	75.7	86.1	78.5	79.6
Naphthalene	<0.009 mg/kg	TM218		0.0287 M	0.0269 M	0.0207 M	2.14 M	2.33 M	9.27 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	1.35 M	1.04 M	4.24 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	0.0866 M	0.207 M	0.647 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	1.11 M	0.878 M	3.56 M
Phenanthrene	<0.015 mg/kg	TM218		0.0367 M	0.0288 M	0.0374 M	6.39 M	5.73 M	15.9 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	<0.016 M	1.87 M	1.8 M	5.06 M
Fluoranthene	<0.017 mg/kg	TM218		0.0494 M	0.0394 M	0.053 M	10.7 M	8 M	17.5 M
Pyrene	<0.015 mg/kg	TM218		0.039 M	0.0278 M	0.0423 M	7.45 M	6.16 M	13.1 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0215 M	<0.014 M	0.0238 M	3.88 M	2.9 M	5.83 M
Chrysene	<0.01 mg/kg	TM218		0.0226 M	0.0174 M	0.0328 M	3.31 M	2.52 M	4.57 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0366 M	<0.015 M	0.037 M	4.73 M	3.45 M	2.48 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	<0.014 M	1.66 M	1.2 M	2.25 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0228 M	<0.015 M	<0.015 M	3.34 M	2.31 M	4.08 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	<0.018 M	2.68 M	1.8 M	3 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	0.546 M	0.372 M	0.534 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	<0.024 M	2.33 M	1.6 M	2.74 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.257	0.14	0.247	53.5	42.3	94.7

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D3	TP3B-D3
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	2.80 - 2.80	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676223	17676231	17676235	17676239	17676272	17676278
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.2	89.3	85.9	86.6	91.4	88.9
Acenaphthene-d10 % recovery**	%	TM218		89.6	92.2	97.1	89.7	90.6	88.8
Phenanthrene-d10 % recovery**	%	TM218		91.5	89.6	87.8	88.5	93.4	85.4
Chrysene-d12 % recovery**	%	TM218		87.1	85.4	79.6	78.8	81.6	91.6
Perylene-d12 % recovery**	%	TM218		84.4	92.9	76.7	72.9	66.8	99.1
Naphthalene	<0.009 mg/kg	TM218		11.9 M	5.74 M	3.95 #	0.55 M	1.63 M	29.6 M
Acenaphthylene	<0.012 mg/kg	TM218		9.77 M	1.84 M	3.53 #	0.128 M	0.0795 M	17 M
Acenaphthene	<0.008 mg/kg	TM218		0.446 M	0.127 M	0.274 #	0.018 M	0.153 M	1.95 M
Fluorene	<0.01 mg/kg	TM218		7.72 M	0.838 M	2.69 #	0.113 M	0.237 M	14.6 M
Phenanthrene	<0.015 mg/kg	TM218		45.2 M	8.4 M	10.8 #	0.823 M	0.567 M	51.9 M
Anthracene	<0.016 mg/kg	TM218		11.8 M	2.16 M	2.97 #	0.18 M	0.172 M	19.9 M
Fluoranthene	<0.017 mg/kg	TM218		42.6 M	12 M	15.4 #	0.905 M	0.556 M	78.9 M
Pyrene	<0.015 mg/kg	TM218		30.7 M	9.1 M	11.1 #	0.682 M	0.717 M	53.7 M
Benz(a)anthracene	<0.014 mg/kg	TM218		14.1 M	4.68 M	3.96 #	0.259 M	0.187 M	31.9 M
Chrysene	<0.01 mg/kg	TM218		11.8 M	3.72 M	3.74 #	0.276 M	0.175 M	27.9 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		16.3 M	6.47 M	4.35 #	0.306 M	0.258 M	47.8 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		6.25 M	1.96 M	1.68 #	0.107 M	0.0838 M	15.1 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		10.6 M	4.16 M	2.98 #	0.193 M	0.115 M	31.9 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		8.32 M	3.73 M	2.06 #	0.138 M	0.0935 M	24.6 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		1.86 M	0.795 M	0.479 #	0.0353 M	<0.023 M	5.6 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		7.32 M	3.28 M	2.05 #	0.132 M	0.103 M	22.3 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		237	69	72.1	4.85	5.12	475

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-D3	TP3B-D1-V	TP3B-D2-V	TP3B-D3-V	TP3B-E1	TP3B-E1
			Depth (m)	2.00 - 2.00	2.60 - 2.60	3.00 - 3.00	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676285	17676402	17676244	17676294	17676203	17676254
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.7	86.2	90	90.3	90	89
Acenaphthene-d10 % recovery**	%	TM218		99.3	83.3	83.9	91.2	83.9	86.6
Phenanthrene-d10 % recovery**	%	TM218		85	90.5	87.8	91.3	87.9	93.5
Chrysene-d12 % recovery**	%	TM218		79.2	83.1	81.2	80.2	85.7	85.1
Perylene-d12 % recovery**	%	TM218		87.1	84.7	79.4	80	84.7	86
Naphthalene	<0.009 mg/kg	TM218		380 M	0.029 M	0.0509 M	5.92 M	0.162 M	39.9 M
Acenaphthylene	<0.012 mg/kg	TM218		204 M	<0.012 M	0.0207 M	0.342 M	0.0168 M	9.61 M
Acenaphthene	<0.008 mg/kg	TM218		13 M	0.0259 M	<0.008 M	0.619 M	0.144 M	1.67 M
Fluorene	<0.01 mg/kg	TM218		166 M	0.019 M	0.0257 M	0.93 M	0.0687 M	4.32 M
Phenanthrene	<0.015 mg/kg	TM218		485 M	0.0871 M	0.164 M	1.49 M	0.953 M	37.6 M
Anthracene	<0.016 mg/kg	TM218		167 M	<0.016 M	0.0301 M	0.169 M	0.23 M	10.3 M
Fluoranthene	<0.017 mg/kg	TM218		400 M	0.112 M	0.233 M	0.204 M	2.35 M	57.6 M
Pyrene	<0.015 mg/kg	TM218		269 M	0.0813 M	0.164 M	0.147 M	2.37 M	49.4 M
Benz(a)anthracene	<0.014 mg/kg	TM218		134 M	0.0445 M	0.0809 M	0.0271 M	1.5 M	27.2 M
Chrysene	<0.01 mg/kg	TM218		112 M	0.0405 M	0.0809 M	0.0267 M	1.67 M	27.4 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		161 M	0.0458 M	0.135 M	0.0322 M	2.39 M	41.1 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		52.8 M	<0.014 M	0.0409 M	<0.014 M	0.96 M	13.9 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		106 M	0.0285 M	0.0728 M	<0.015 M	1.8 M	27.1 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		78.3 M	<0.018 M	0.0647 M	<0.018 M	1.44 M	21.5 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		17.8 M	<0.023 M	<0.023 M	<0.023 M	0.227 M	4.63 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		69.4 M	<0.024 M	0.0619 M	<0.024 M	1.33 M	18.6 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2820	0.514	1.23	9.9	17.6	392

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E1	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E3
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676314	17676406	17676207	17676211	17676215	17676249
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.2	90.1	87.1	90.1	86.9	90.5
Acenaphthene-d10 % recovery**	%	TM218		84.6	89.5	87.8	89.4	89.5	90.7
Phenanthrene-d10 % recovery**	%	TM218		86.7	85.6	80.1	82	85.9	84.2
Chrysene-d12 % recovery**	%	TM218		87.6	81.3	77.9	82.7	86.4	82.3
Perylene-d12 % recovery**	%	TM218		92.3	76.1	100	92.4	85.9	89.9
Naphthalene	<0.009 mg/kg	TM218		0.929 #	22 M	23.3 M	17.7 M	34.1 M	40.6 M
Acenaphthylene	<0.012 mg/kg	TM218		1.36 #	4.98 M	15.6 M	10.6 M	16 M	17.9 M
Acenaphthene	<0.008 mg/kg	TM218		0.13 #	0.34 M	1.38 M	0.313 M	0.906 M	1.87 M
Fluorene	<0.01 mg/kg	TM218		0.703 #	2.73 M	13.5 M	3.44 M	8.64 M	22.7 M
Phenanthrene	<0.015 mg/kg	TM218		6.92 #	18.6 M	79.1 M	29.1 M	56.6 M	93.1 M
Anthracene	<0.016 mg/kg	TM218		2.2 #	5.13 M	25.2 M	10.9 M	15.7 M	18.2 M
Fluoranthene	<0.017 mg/kg	TM218		14.6 #	29.8 M	129 M	79.4 M	103 M	109 M
Pyrene	<0.015 mg/kg	TM218		10.7 #	21.4 M	94.3 M	58.1 M	74.4 M	75.4 M
Benz(a)anthracene	<0.014 mg/kg	TM218		5.41 #	11.5 M	48.7 M	34.1 M	43.4 M	38.4 M
Chrysene	<0.01 mg/kg	TM218		4.64 #	9.31 M	40.1 M	29.8 M	36.3 M	28.6 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		7.22 #	13.4 M	52.7 M	47.6 M	61.1 M	52.5 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.51 #	5.73 M	24.2 M	15.2 M	17.3 M	17.4 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		4.95 #	10.1 M	42 M	32 M	40.9 M	35.7 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		3.86 #	7.71 M	29.9 M	27.5 M	34.6 M	29.2 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.799 #	1.66 M	7.36 M	6.27 M	7.29 M	6.23 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		3.38 #	6.7 M	27.1 M	24.4 M	31.3 M	26.3 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		70.3	171	654	426	582	614

Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E3	TP3B-E3	TP3B-E1-V	TP3B-E2-V	TP3B-E3-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	2.20 - 2.20	3.00 - 3.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676258	17676263	17676370	17676219	17676267
			AGS Reference					
Naphthalene-d8 % recovery**	%	TM218		76.3	98.7	80.7	82	90.6
Acenaphthene-d10 % recovery**	%	TM218		87.8	106	83	84.5	87.3
Phenanthrene-d10 % recovery**	%	TM218		86	96.4	85.6	86.9	84.7
Chrysene-d12 % recovery**	%	TM218		82.2	87.9	83.9	81.8	81.4
Perylene-d12 % recovery**	%	TM218		70.6	86.4	89.2	80.3	89.7
Naphthalene	<0.009 mg/kg	TM218		110 M	26.1 #	0.0578 M	0.0682 M	0.0125 M
Acenaphthylene	<0.012 mg/kg	TM218		39.3 M	8.53 #	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		3.27 M	0.84 #	<0.008 M	0.0573 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		39.2 M	9.2 #	<0.01 M	0.0455 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		142 M	34.8 #	0.0511 M	0.204 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		27 M	8.1 #	<0.016 M	0.0417 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		135 M	47.7 #	0.0905 M	0.192 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		90.4 M	36.8 #	0.069 M	0.157 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		40.7 M	14.5 #	0.0394 M	0.0915 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		31.4 M	12 #	0.0341 M	0.0918 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		46.3 M	16.7 #	0.057 M	0.108 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		16.4 M	6.06 #	<0.014 M	0.0425 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		32.3 M	11.6 #	0.0354 M	0.0728 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		21.4 M	7.98 #	0.0279 M	0.0435 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		4.59 M	1.7 #	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		20.6 M	7.71 #	<0.024 M	0.0488 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		800	250	0.462	1.26	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C2	TP3B-C2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676298	17676302	17676309	17676319	17676328	17676332
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		94	91	72	89	62	55
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	0.233	0.544	0.874	<0.176	2.41
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.108	<0.04	0.0944
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	0.101	0.123	<0.04	0.124
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.089	0.193	0.311	<0.04	1.19
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	1.37	37.1	9.24	4.69	3.52
Aliphatics >C16-C21	<0.1 mg/kg	TM173		6.74	5.87	166	52.5	57.6	7.54
Aliphatics >C21-C35	<0.1 mg/kg	TM173		50.6	53.3	1610	263	111	25.2
Aliphatics >C35-C44	<0.1 mg/kg	TM173		20.4	6.68	482	73.1	16.1	3.06
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		77.7	67.2	2290	398	190	39.3
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	0.0746	0.0889	<0.04	0.12
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.06	0.129	0.207	<0.04	0.791
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	11	9.83	3.91	17.4	12.7
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		6.45	51.3	59.5	29.2	80.4	61
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		38.8	106	400	114	234	93.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		20.5	28	180	38.6	59.9	26
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.63	10.4	57.8	12	17.6	8.33
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		65.8	196	649	185	392	193
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		144	264	2940	584	582	234

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C2	TP3B-C2	TP3B-C3	TP3B-C3	TP3B-C3	TP3B-C3
			Depth (m)	2.00 - 2.00	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676342	17676346	17676355	17676360	17676366	17676376
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89	88	90	88	122	86
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	0.328	<0.176	<0.176	0.239	2.29
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0445
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	0.07	<0.04	<0.04	<0.04	0.184
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.0952	<0.04	<0.04	0.0828	1.12
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.12	9.61	9.33	21	7.07	24.9
Aliphatics >C16-C21	<0.1 mg/kg	TM173		17.8	28.5	226	581	182	69.8
Aliphatics >C21-C35	<0.1 mg/kg	TM173		156	213	128	212	74.7	180
Aliphatics >C35-C44	<0.1 mg/kg	TM173		64.3	29.9	23.7	14.7	5.41	55.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		244	281	387	828	270	331
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.0462	<0.04	<0.04	<0.04	0.144
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.063	<0.04	<0.04	0.0555	0.749
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.13	4.88	5.24	8.04	7.74	9.3
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		5.53	24.7	69	162	89	57
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		39.3	103	97.5	133	90	125
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		23.2	25.2	24.3	24.6	21.4	55.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		8.43	7.53	8.18	7.84	8.08	22.2
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		69.1	158	196	328	208	247
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		313	439	583	1160	478	580

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1-V	TP3B-C2-V	TP3B-C3-V	TP3B-D1	TP3B-D1	TP3B-D1
			Depth (m)	4.10 - 4.10	3.80 - 3.80	3.30 - 3.30	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676324	17676350	17676380	17676384	17676388	17676398
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89	105	102	79	38	48
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	0.231	2.21	1.29
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0808	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.274	0.118
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.258	0.113
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0814	0.654	0.463
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	29	9.53
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	3.76	39.3	22.3
Aliphatics >C21-C35	<0.1 mg/kg	TM173		4.02	3.33	6.74	24.1	151	89.6
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	3.37	85.5	55
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		4.02	3.33	6.74	31.2	305	177
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.116	0.0501
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.11	0.0685
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.28	0.139
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0539	0.435	0.309
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.905	<0.1	<0.1	3.59	27.8	34.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		2.74	<0.1	<0.1	17.6	115	129
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		58	29.9	17.8	36.9	289	239
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		10.4	3.41	3.47	8.4	141	90.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.5	<0.1	<0.1	2.45	57.4	35.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		72.1	33.3	21.2	66.5	572	493
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		76.1	36.6	28	97.8	880	671

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D3	TP3B-D3
#	ISO17025 accredited.							
M	*m*CERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	2.80 - 2.80	0.30 - 0.30	1.00 - 1.00
		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
		Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
		Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
		Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
		SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
(F)	Trigger breach confirmed	Lab Sample No.(s)	17676223	17676231	17676235	17676239	17676272	17676278
1-5&+§@	Sample deviation (see appendix)	AGS Reference						

Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	65	34	79	65	84	30
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089	0.478	0.244	1.39	0.626	<0.176	0.343
Aliphatics >C5-C6	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	0.0686	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089	<0.04	0.0466	0.0949	0.147	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089	0.209	<0.04	0.708	0.0635	<0.04	0.089
Aliphatics >C12-C16	<0.1 mg/kg	TM173	28.3	36.6	117	4.05	5.21	16.3
Aliphatics >C16-C21	<0.1 mg/kg	TM173	511	647	1600	85.3	90	91.9
Aliphatics >C21-C35	<0.1 mg/kg	TM173	135	158	294	59.3	224	94.9
Aliphatics >C35-C44	<0.1 mg/kg	TM173	7.08	10.7	11.6	6.96	45.4	21.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173	681	852	2020	156	365	225
Aromatics >EC5-EC7	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	0.0838	0.0482	0.0477
Aromatics >EC7-EC8	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089	<0.04	0.053	0.0764	0.169	<0.04	0.0521
Aromatics >EC10-EC12	<0.01 mg/kg	TM089	0.139	<0.04	0.472	0.0419	<0.04	0.0597
Aromatics >EC12-EC16	<0.1 mg/kg	TM173	35.1	13.8	47.5	1.76	4.25	68.8
Aromatics >EC16-EC21	<0.1 mg/kg	TM173	245	211	447	28.7	59.7	354
Aromatics >EC21-EC35	<0.1 mg/kg	TM173	228	160	219	41.2	147	779
Aromatics >EC35-EC44	<0.1 mg/kg	TM173	47.8	32.6	35.1	6.61	33.8	191
Aromatics >EC40-EC44	<0.1 mg/kg	TM173	14.1	9.58	9.9	1.25	14.2	57.4
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173	556	417	748	78.3	245	1390
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173	1240	1270	2770	235	609	1620

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-D3	TP3B-D1-V	TP3B-D2-V	TP3B-D3-V	TP3B-E1	TP3B-E1
			Depth (m)	2.00 - 2.00	2.60 - 2.60	3.00 - 3.00	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676285	17676402	17676244	17676294	17676203	17676254
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		66	89	82	83	128	69
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		1.28	<0.176	<0.176	1.69	<0.176	1.39
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0452	<0.04	<0.04	0.0691	<0.04	0.0727
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0881	<0.04	<0.04	0.18	<0.04	0.117
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.588	<0.04	0.0451	0.574	<0.04	0.617
Aliphatics >C12-C16	<0.1 mg/kg	TM173		11.3	<0.1	<0.1	29.1	4.5	4.34
Aliphatics >C16-C21	<0.1 mg/kg	TM173		98.2	0.133	3.56	264	18.2	18.3
Aliphatics >C21-C35	<0.1 mg/kg	TM173		64	2.39	6.04	56	99.8	64.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		8.59	<0.1	<0.1	0.121	27.7	16.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		182	2.53	9.6	350	150	104
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0881	<0.04	<0.04	0.409	<0.04	0.104
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.392	<0.04	<0.04	0.382	<0.04	0.411
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		233	0.346	<0.1	16.1	1.2	10.5
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		671	1.69	2.53	111	14.8	49
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		1040	15.9	21.7	45.1	84.3	154
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		248	7.09	4.01	6.04	31	53.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		68.9	3.19	<0.1	2.06	10.4	19.6
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		2190	25	28.2	179	131	267
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		2380	27.6	37.9	530	282	372

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E1	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E3
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676314	17676406	17676207	17676211	17676215	17676249
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		104	10	20	8	14	14
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	0.519	0.323	<0.176	0.371	0.627
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	0.0571	0.0403	<0.04	0.0672	0.0784
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0516	0.0448
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.157	0.0874	<0.04	0.0912	0.212
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.83	12.4	11.9	11.4	15.8	10.5
Aliphatics >C16-C21	<0.1 mg/kg	TM173		11.2	75	138	64.7	167	71.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		63.4	266	92.2	65.3	113	106
Aliphatics >C35-C44	<0.1 mg/kg	TM173		19.3	61.2	22.4	10.8	12.7	13.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		96.7	414	264	152	308	201
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	0.0571	<0.04	<0.04	<0.04	0.0459
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.056	0.0459	<0.04	0.0564	0.0594
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.105	0.0582	<0.04	0.06	0.141
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.41	34.5	23.7	33.1	63.1	38.7
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		21.6	205	155	163	446	203
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		72.8	441	298	400	874	406
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		23.9	111	85.7	93.4	185	100
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.94	32.8	29.2	27	47.5	30.5
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		122	791	563	689	1570	748
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		218	1210	827	842	1880	950

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E3	TP3B-E3	TP3B-E1-V	TP3B-E2-V	TP3B-E3-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	2.20 - 2.20	3.00 - 3.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676258	17676263	17676370	17676219	17676267
			AGS Reference					
GRO Surrogate % recovery**	%	TM089		24	64	110	98	96
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		7.85	9.34	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0526	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.193	0.0803	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.35	0.241	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		3.88	5.17	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		14.9	123	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		57.6	2440	<0.1	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		114	856	8.89	0.37	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		14.8	44.9	0.345	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		201	3470	9.24	0.37	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.214	0.044	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.108	0.0429	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.472	0.296	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		2.59	3.45	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		489	160	0.58	0.332	0.477
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1900	1050	0.771	0.805	1.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		2530	881	60.5	10.7	23.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		504	175	11.5	4.17	6.74
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		158	58.4	3.77	1.73	2.82
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		5420	2260	73.3	16	32.6
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		5630	5740	82.5	16.4	32.6

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C2	TP3B-C2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676298	17676302	17676309	17676319	17676328	17676332
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	105	106	111	95.8	101
Toluene-d8**	%	TM116		99.8	99.2	94.7	98.6	95.7	98.9
4-Bromofluorobenzene**	%	TM116		103	87.7	95.8	96.9	87.7	91
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.745 M	0.283 M	4.17 M	0.537 M	14.2 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C2	TP3B-C2	TP3B-C3	TP3B-C3	TP3B-C3	TP3B-C3
			Depth (m)	2.00 - 2.00	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676342	17676346	17676355	17676360	17676366	17676376
			AGS Reference						
Dibromofluoromethane**	%	TM116		113	110	105	104	95.1	104
Toluene-d8**	%	TM116		98.9	98	95.1	97.4	95.9	97
4-Bromofluorobenzene**	%	TM116		98.4	93.8	88.5	89.6	84.4	86.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 #	<0.09 #	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 #	<0.07 #	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 #	<0.04 #	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.315 M	0.392 M	<0.13 #	1.38 #	0.305 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1-V	TP3B-C2-V	TP3B-C3-V	TP3B-D1	TP3B-D1	TP3B-D1
			Depth (m)	4.10 - 4.10	3.80 - 3.80	3.30 - 3.30	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676324	17676350	17676380	17676384	17676388	17676398
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	105	112	94.8	109	99.4
Toluene-d8**	%	TM116		97.6	97.9	97.9	96.9	98.8	90
4-Bromofluorobenzene**	%	TM116		98.9	87.4	88.6	83.8	96.2	74.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<2 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<1.8 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<1.4 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.8 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<2 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<2 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	1.34 M	<2.6 M	5.11 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<8	<0.4

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D3	TP3B-D3
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	2.80 - 2.80	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676223	17676231	17676235	17676239	17676272	17676278
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.7	101	109	103	98	94.3
Toluene-d8**	%	TM116		95.9	96	96.6	97.6	97.5	95.3
4-Bromofluorobenzene**	%	TM116		81	92.7	85.1	93.3	89.3	83.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 #	<0.2 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.18 M	<0.09 #	<0.18 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.14 M	<0.07 #	<0.14 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.08 M	<0.04 #	<0.08 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.2 #	<0.1 #	<0.2 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 #	<0.2 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		2.26 M	0.439 M	1.22 #	<0.26 M	0.219 M	3.22 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.8	<0.4	<0.8	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-D3	TP3B-D1-V	TP3B-D2-V	TP3B-D3-V	TP3B-E1	TP3B-E1
			Depth (m)	2.00 - 2.00	2.60 - 2.60	3.00 - 3.00	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676285	17676402	17676244	17676294	17676203	17676254
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	109	111	110	107	92.1
Toluene-d8**	%	TM116		98.8	96.8	98.6	98.2	96.4	90.9
4-Bromofluorobenzene**	%	TM116		95.2	88.9	89.7	94.2	87.9	73.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	0.0592 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		5.9 M	<0.13 M	<0.13 M	6.39 M	<0.13 M	1.77 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E1	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E3
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676314	17676406	17676207	17676211	17676215	17676249
			AGS Reference						
Dibromofluoromethane**	%	TM116		102	101	94.6	102	106	102
Toluene-d8**	%	TM116		95	98	94.4	98.1	98.9	96.6
4-Bromofluorobenzene**	%	TM116		86.1	101	82.7	87.5	101	93.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 #	<2 M	<0.2 M	<2 M	<2 M	<2 M
Benzene	<0.009 mg/kg	TM116		<0.09 #	<1.8 M	<0.18 M	<1.8 M	<1.8 M	<1.8 M
Toluene	<0.007 mg/kg	TM116		<0.07 #	<1.4 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 #	<0.8 M	<0.08 M	<0.8 M	<0.8 M	<0.8 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<2 #	<0.2 #	<2 #	<2 #	<2 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 #	<2 M	<0.2 M	<2 M	<2 M	<2 M
Naphthalene	<0.013 mg/kg	TM116		0.356 #	23.2 M	0.681 M	11.9 M	6.44 M	37.3 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<8	<0.8	<8	<8	<8

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E3	TP3B-E3	TP3B-E1-V	TP3B-E2-V	TP3B-E3-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	2.20 - 2.20	3.00 - 3.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676258	17676263	17676370	17676219	17676267
			AGS Reference					
Dibromofluoromethane**	%	TM116		78.3	104	105	108	113
Toluene-d8**	%	TM116		90.7	94.1	96.9	100	98.3
4-Bromofluorobenzene**	%	TM116		73.4	79.8	84.6	103	99
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 #	<0.1 M	<2 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		0.172 M	<0.09 #	<0.09 M	<1.8 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		0.116 M	<0.07 #	<0.07 M	<1.4 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 #	<0.04 M	<0.8 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		0.183 #	<0.1 #	<0.1 #	<2 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 #	<0.1 M	<2 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		236 M	10.3 #	<0.13 M	<2.6 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		0.47	<0.4	<0.4	<8	<0.4

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-C1 0.50 - 0.50 SOLID 01/06/2018 00:00:00 05/06/2018 07:04:49 180604-4 17676298 TM048	08/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-C1 2.00 - 2.00 SOLID 01/06/2018 00:00:00 05/06/2018 06:59:33 180604-4 17676309 TM048	08/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-C2 0.30 - 0.30 SOLID 01/06/2018 00:00:00 05/06/2018 07:02:19 180604-4 17676328 TM048	08/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-C2 2.00 - 2.00 SOLID 01/06/2018 00:00:00 05/06/2018 07:07:45 180604-4 17676342 TM048	08/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-C3 0.50 - 0.50 SOLID 01/06/2018 00:00:00 05/06/2018 12:37:58 180604-4 17676355 TM048	11/06/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-C3 2.00 - 2.00 SOLID 01/06/2018 00:00:00 06/06/2018 07:22:27 180604-4 17676366 TM048	11/06/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-D1 1.00 - 1.00 SOLID 01/06/2018 00:00:00 05/06/2018 10:09:11 180604-4 17676388 TM048	11/06/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-D2 0.40 - 0.40 SOLID 01/06/2018 00:00:00 05/06/2018 12:40:39 180604-4 17676223 TM048	11/06/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-D2 2.00 - 2.00 SOLID 01/06/2018 00:00:00 05/06/2018 06:20:50 180604-4 17676235 TM048	06/06/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-D3 1.00 - 1.00 SOLID 01/06/2018 00:00:00 06/06/2018 07:25:33 180604-4 17676278 TM048	11/06/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-E1 0.50 - 0.50 SOLID 01/06/2018 00:00:00 05/06/2018 09:22:13 180604-4 17676203 TM048	08/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-E1 2.00 - 2.00 SOLID 01/06/2018 00:00:00 05/06/2018 10:11:57 180604-4 17676314 TM048	11/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Trace

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-E2 0.50 - 0.50 SOLID 01/06/2018 00:00:00 05/06/2018 06:46:42 180604-4 17676406 TM048	11/06/2018	James Richards	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-E2 2.00 - 2.00 SOLID 01/06/2018 00:00:00 05/06/2018 06:43:56 180604-4 17676211 TM048	11/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-E3 0.50 - 0.50 SOLID 01/06/2018 00:00:00 04/06/2018 19:06:20 180604-4 17676249 TM048	11/06/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-E3 2.00 - 2.00 SOLID 01/06/2018 00:00:00 05/06/2018 07:54:09 180604-4 17676263 TM048	11/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-C3 2.00 - 2.00 SOLID 01/06/2018 00:00:00 06/06/2018 07:22:01 180604-4 17676366 TM304	No (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-D3 1.00 - 1.00 SOLID 01/06/2018 00:00:00 06/06/2018 07:25:03 180604-4 17676278 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-E2 0.50 - 0.50 SOLID 01/06/2018 00:00:00 05/06/2018 06:46:16 180604-4 17676406 TM304	No (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0.685
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.3
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676203
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000259	<0.00001	0.000259	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00244	<0.001	0.0244	<0.01	-	-	-
Copper	0.00175	<0.0003	0.0175	<0.003	-	-	-
Lead	0.000601	<0.0002	0.00601	<0.002	-	-	-
Manganese	0.0433	<0.003	0.433	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0521	<0.001	0.521	<0.01	-	-	-
Zinc	0.00352	<0.001	0.0352	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.501	<0.019	5.01	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00196	<0.00001	0.0196	<0.0001	-	-	-
Acenaphthene by GCMS	0.000434	<0.000005	0.00434	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Fluoranthene by GCMS	0.0013	<0.000005	0.013	<0.00005	-	-	-
Anthracene by GCMS	0.000195	<0.000005	0.00195	<0.00005	-	-	-
Phenanthrene by GCMS	0.000948	<0.000005	0.00948	<0.00005	-	-	-
Fluorene by GCMS	0.000155	<0.000005	0.00155	<0.00005	-	-	-
Chrysene by GCMS	0.000179	<0.000005	0.00179	<0.00005	-	-	-
Pyrene by GCMS	0.00168	<0.000005	0.0168	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000477	<0.000005	0.000477	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000191	<0.000002	0.000191	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000621	<0.000005	0.0000621	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00719	<0.000082	0.0719	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.62
Conductivity (µS/cm)	1,110.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates
18/06/2018 16:26:12

16:25:27 18/06/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0.685
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.3
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676203
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.62
Conductivity (µS/cm)	1,110.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates
18/06/2018 16:26:12

16:25:27 18/06/2018

CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676207
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.21	<0.2	2.1	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000242	<0.00001	0.000242	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000594	<0.0005	0.00594	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00106	<0.001	0.0106	<0.01	-	-	-
Copper	0.00511	<0.0003	0.0511	<0.003	-	-	-
Lead	0.000519	<0.0002	0.00519	<0.002	-	-	-
Manganese	0.00863	<0.003	0.0863	<0.03	-	-	-
Nickel	0.000809	<0.0004	0.00809	<0.004	-	-	-
Selenium	0.0013	<0.001	0.013	<0.01	-	-	-
Vanadium	0.0818	<0.001	0.818	<0.01	-	-	-
Zinc	0.00693	<0.001	0.0693	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.243	<0.019	2.43	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000417	<0.00001	0.00417	<0.0001	-	-	-
Acenaphthene by GCMS	0.000038	<0.000005	0.00038	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000319	<0.000005	0.00319	<0.00005	-	-	-
Fluoranthene by GCMS	0.000465	<0.000005	0.00465	<0.00005	-	-	-
Anthracene by GCMS	0.0000773	<0.000005	0.000773	<0.00005	-	-	-
Phenanthrene by GCMS	0.000441	<0.000005	0.00441	<0.00005	-	-	-
Fluorene by GCMS	0.000142	<0.000005	0.00142	<0.00005	-	-	-
Chrysene by GCMS	0.0000367	<0.000005	0.000367	<0.00005	-	-	-
Pyrene by GCMS	0.000478	<0.000005	0.00478	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000267	<0.000005	0.000267	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000328	<0.000005	0.000328	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000215	<0.000002	0.000215	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000065	<0.000005	0.000065	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00002	<0.000005	0.0002	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00253	<0.000082	0.0253	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.33
Conductivity (µS/cm)	616.00
Temperature (°C)	21.30
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
18/06/2018 16:26:12

16:25:27 18/06/2018

CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676207
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.33
Conductivity (µS/cm)	616.00
Temperature (°C)	21.30
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676211
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.067	<0.05	0.67	<0.5	-	-	-
Arsenic	0.00229	<0.0005	0.0229	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00309	<0.0003	0.0309	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000564	<0.0004	0.00564	<0.004	-	-	-
Selenium	0.00178	<0.001	0.0178	<0.01	-	-	-
Vanadium	0.202	<0.001	2.02	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.352	<0.019	3.52	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000558	<0.00001	0.00558	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000279	<0.000005	0.000279	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000153	<0.000005	0.00153	<0.00005	-	-	-
Fluoranthene by GCMS	0.000543	<0.000005	0.00543	<0.00005	-	-	-
Anthracene by GCMS	0.0000668	<0.000005	0.000668	<0.00005	-	-	-
Phenanthrene by GCMS	0.000234	<0.000005	0.00234	<0.00005	-	-	-
Fluorene by GCMS	0.0000623	<0.000005	0.000623	<0.00005	-	-	-
Chrysene by GCMS	0.000304	<0.000005	0.00304	<0.00005	-	-	-
Pyrene by GCMS	0.000442	<0.000005	0.00442	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000255	<0.000005	0.00255	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000532	<0.000005	0.00532	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00024	<0.000005	0.0024	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000347	<0.000002	0.00347	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000118	<0.000005	0.00118	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000372	<0.000005	0.00372	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000469	<0.000005	0.00469	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00472	<0.000082	0.0472	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.05
Conductivity (µS/cm)	153.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676211
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.05
Conductivity (µS/cm)	153.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676215
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	2.90 - 2.90

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.173	<0.05	1.73	<0.5	-	-	-
Arsenic	0.00317	<0.0005	0.0317	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00101	<0.001	0.0101	<0.01	-	-	-
Copper	0.00819	<0.0003	0.0819	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00136	<0.0004	0.0136	<0.004	-	-	-
Selenium	0.00225	<0.001	0.0225	<0.01	-	-	-
Vanadium	0.204	<0.001	2.04	<0.01	-	-	-
Zinc	0.00111	<0.001	0.0111	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.275	<0.019	2.75	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000243	<0.00001	0.00243	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000645	<0.000005	0.0000645	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000724	<0.000005	0.000724	<0.00005	-	-	-
Fluoranthene by GCMS	0.000217	<0.000005	0.00217	<0.00005	-	-	-
Anthracene by GCMS	0.0000414	<0.000005	0.000414	<0.00005	-	-	-
Phenanthrene by GCMS	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Fluorene by GCMS	0.000023	<0.000005	0.00023	<0.00005	-	-	-
Chrysene by GCMS	0.0000782	<0.000005	0.000782	<0.00005	-	-	-
Pyrene by GCMS	0.000186	<0.000005	0.00186	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000837	<0.000005	0.000837	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000454	<0.000005	0.000454	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000844	<0.000002	0.000844	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000226	<0.000005	0.000226	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00011	<0.000005	0.0011	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000696	<0.000005	0.000696	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00156	<0.000082	0.0156	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.54
Conductivity (µS/cm)	253.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676215
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	2.90 - 2.90

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.54
Conductivity (µS/cm)	253.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676223
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000113	<0.00001	0.000113	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000616	<0.0005	0.00616	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00721	<0.001	0.0721	<0.01	-	-	-
Copper	0.0063	<0.0003	0.063	<0.003	-	-	-
Lead	0.000263	<0.0002	0.00263	<0.002	-	-	-
Manganese	0.00362	<0.003	0.0362	<0.03	-	-	-
Nickel	0.000732	<0.0004	0.00732	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00535	<0.001	0.0535	<0.01	-	-	-
Zinc	0.00152	<0.001	0.0152	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00859	<0.00001	0.0859	<0.0001	-	-	-
Acenaphthene by GCMS	0.000436	<0.000005	0.00436	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0056	<0.000005	0.056	<0.00005	-	-	-
Fluoranthene by GCMS	0.00637	<0.000005	0.0637	<0.00005	-	-	-
Anthracene by GCMS	0.00191	<0.000005	0.0191	<0.00005	-	-	-
Phenanthrene by GCMS	0.0118	<0.000005	0.118	<0.00005	-	-	-
Fluorene by GCMS	0.00219	<0.000005	0.0219	<0.00005	-	-	-
Chrysene by GCMS	0.000235	<0.000005	0.00235	<0.00005	-	-	-
Pyrene by GCMS	0.00425	<0.000005	0.0425	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000257	<0.000005	0.00257	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000687	<0.000005	0.000687	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000268	<0.000002	0.000268	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0418	<0.000082	0.418	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	1,790.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676223
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.022	<0.01	0.22	<0.1	-	-	-
Aromatics >EC16-EC21	0.077	<0.01	0.77	<0.1	-	-	-
Aromatics >EC21-EC35	0.023	<0.01	0.23	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.122	<0.01	1.22	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.125	<0.01	1.25	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	1,790.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.4
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676231
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00585	<0.001	0.0585	<0.01	-	-	-
Copper	0.00618	<0.0003	0.0618	<0.003	-	-	-
Lead	0.00218	<0.0002	0.0218	<0.002	-	-	-
Manganese	0.00984	<0.003	0.0984	<0.03	-	-	-
Nickel	0.000642	<0.0004	0.00642	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0104	<0.001	0.104	<0.01	-	-	-
Zinc	0.00436	<0.001	0.0436	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.204	<0.019	2.04	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0124	<0.00001	0.124	<0.0001	-	-	-
Acenaphthene by GCMS	0.000506	<0.000005	0.00506	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00511	<0.000005	0.0511	<0.00005	-	-	-
Fluoranthene by GCMS	0.00673	<0.000005	0.0673	<0.00005	-	-	-
Anthracene by GCMS	0.00244	<0.000005	0.0244	<0.00005	-	-	-
Phenanthrene by GCMS	0.0161	<0.000005	0.161	<0.00005	-	-	-
Fluorene by GCMS	0.00281	<0.000005	0.0281	<0.00005	-	-	-
Chrysene by GCMS	0.000301	<0.000005	0.00301	<0.00005	-	-	-
Pyrene by GCMS	0.00463	<0.000005	0.0463	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000285	<0.000005	0.00285	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000709	<0.000005	0.000709	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000253	<0.000005	0.000253	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000033	<0.000002	0.00033	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000764	<0.000005	0.0000764	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0514	<0.000082	0.514	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.63
Conductivity (µS/cm)	1,520.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.4
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676231
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC16-EC21	0.088	<0.01	0.88	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.104	<0.01	1.04	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.106	<0.01	1.06	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.63
Conductivity (µS/cm)	1,520.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676235
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00293	<0.001	0.0293	<0.01	-	-	-
Copper	0.00394	<0.0003	0.0394	<0.003	-	-	-
Lead	0.000305	<0.0002	0.00305	<0.002	-	-	-
Manganese	0.0386	<0.003	0.386	<0.03	-	-	-
Nickel	0.000614	<0.0004	0.00614	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0301	<0.001	0.301	<0.01	-	-	-
Zinc	0.0491	<0.001	0.491	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0554	<0.019	0.554	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0456	<0.00001	0.456	<0.0001	-	-	-
Acenaphthene by GCMS	0.0021	<0.000005	0.021	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0396	<0.000005	0.396	<0.00005	-	-	-
Fluoranthene by GCMS	0.00989	<0.000005	0.0989	<0.00005	-	-	-
Anthracene by GCMS	0.00844	<0.000005	0.0844	<0.00005	-	-	-
Phenanthrene by GCMS	0.0312	<0.000005	0.312	<0.00005	-	-	-
Fluorene by GCMS	0.0163	<0.000005	0.163	<0.00005	-	-	-
Chrysene by GCMS	0.00038	<0.000005	0.0038	<0.00005	-	-	-
Pyrene by GCMS	0.00582	<0.000005	0.0582	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000364	<0.000005	0.00364	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000092	<0.000005	0.00092	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000309	<0.000005	0.000309	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000541	<0.000002	0.000541	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000096	<0.000005	0.000096	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000199	<0.000005	0.000199	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.16	<0.000082	1.6	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.072	<0.05	0.72	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.63
Conductivity (µS/cm)	1,180.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676235
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.034	<0.01	0.34	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.023	<0.01	0.23	<0.1	-	-	-
Aromatics >EC12-EC16	0.092	<0.01	0.92	<0.1	-	-	-
Aromatics >EC16-EC21	0.167	<0.01	1.67	<0.1	-	-	-
Aromatics >EC21-EC35	0.024	<0.01	0.24	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.283	<0.01	2.83	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.356	<0.01	3.56	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.63
Conductivity (µS/cm)	1,180.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.154	**Natural Moisture Content (%)**	71.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	58.4
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676239
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	2.80 - 2.80

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	5.67	<0.2	56.7	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.108	<0.05	1.08	<0.5	-	-	-
Arsenic	0.00207	<0.0005	0.0207	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00203	<0.001	0.0203	<0.01	-	-	-
Copper	0.00236	<0.0003	0.0236	<0.003	-	-	-
Lead	0.00915	<0.0002	0.0915	<0.002	-	-	-
Manganese	0.0667	<0.003	0.667	<0.03	-	-	-
Nickel	0.00286	<0.0004	0.0286	<0.004	-	-	-
Selenium	0.00191	<0.001	0.0191	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.019	<0.001	0.19	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.125	<0.019	1.25	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000475	<0.00001	0.00475	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000548	<0.000005	0.000548	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000268	<0.000005	0.00268	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000623	<0.000005	0.000623	<0.00005	-	-	-
Anthracene by GCMS	0.0000283	<0.000005	0.000283	<0.00005	-	-	-
Phenanthrene by GCMS	0.00022	<0.000005	0.0022	<0.00005	-	-	-
Fluorene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000526	<0.000005	0.000526	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00129	<0.000082	0.0129	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	8.44
Conductivity (µS/cm)	379.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.836

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.154	**Natural Moisture Content (%)**	71.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	58.4
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676239
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	2.80 - 2.80

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	8.44
Conductivity (µS/cm)	379.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.836

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676249
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.211	<0.05	2.11	<0.5	-	-	-
Arsenic	0.00484	<0.0005	0.0484	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00477	<0.0003	0.0477	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000722	<0.0004	0.00722	<0.004	-	-	-
Selenium	0.00254	<0.001	0.0254	<0.01	-	-	-
Vanadium	0.203	<0.001	2.03	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.233	<0.019	2.33	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00063	<0.00001	0.0063	<0.0001	-	-	-
Acenaphthene by GCMS	0.000258	<0.000005	0.00258	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00219	<0.000005	0.0219	<0.00005	-	-	-
Fluoranthene by GCMS	0.00369	<0.000005	0.0369	<0.00005	-	-	-
Anthracene by GCMS	0.000594	<0.000005	0.00594	<0.00005	-	-	-
Phenanthrene by GCMS	0.00356	<0.000005	0.0356	<0.00005	-	-	-
Fluorene by GCMS	0.00139	<0.000005	0.0139	<0.00005	-	-	-
Chrysene by GCMS	0.000702	<0.000005	0.00702	<0.00005	-	-	-
Pyrene by GCMS	0.00263	<0.000005	0.0263	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000921	<0.000005	0.00921	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00133	<0.000005	0.0133	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000532	<0.000005	0.00532	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000902	<0.000002	0.00902	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000196	<0.000005	0.00196	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000758	<0.000005	0.00758	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000899	<0.000005	0.00899	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0212	<0.000082	0.212	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.32
Conductivity (µS/cm)	173.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.889

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Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676249
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.014	<0.01	0.14	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.037	<0.01	0.37	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.32
Conductivity (µS/cm)	173.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	19.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676254
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.446	<0.2	4.46	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000835	<0.00001	0.000835	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00475	<0.001	0.0475	<0.01	-	-	-
Copper	0.00534	<0.0003	0.0534	<0.003	-	-	-
Lead	0.0011	<0.0002	0.011	<0.002	-	-	-
Manganese	0.114	<0.003	1.14	<0.03	-	-	-
Nickel	0.00106	<0.0004	0.0106	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.11	<0.001	1.1	<0.01	-	-	-
Zinc	0.00403	<0.001	0.0403	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.342	<0.019	3.42	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00053	<0.00001	0.0053	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000594	<0.000005	0.000594	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Fluoranthene by GCMS	0.000158	<0.000005	0.00158	<0.00005	-	-	-
Anthracene by GCMS	0.0000238	<0.000005	0.000238	<0.00005	-	-	-
Phenanthrene by GCMS	0.000147	<0.000005	0.00147	<0.00005	-	-	-
Fluorene by GCMS	0.0000336	<0.000005	0.000336	<0.00005	-	-	-
Chrysene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Pyrene by GCMS	0.000207	<0.000005	0.00207	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00129	<0.000082	0.0129	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.26
Conductivity (µS/cm)	823.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.882

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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	19.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676254
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.01	<0.01	0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.03	<0.01	0.3	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.26
Conductivity (µS/cm)	823.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676258
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000197	<0.00001	0.000197	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000998	<0.0005	0.00998	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00679	<0.0003	0.0679	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000993	<0.0004	0.00993	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.433	<0.001	4.33	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.157	<0.00002	1.57	<0.0002	-	-	-
Acenaphthene by GCMS	0.00254	<0.00001	0.0254	<0.0001	-	-	-
Acenaphthylene by GCMS	0.0532	<0.00001	0.532	<0.0001	-	-	-
Fluoranthene by GCMS	0.0043	<0.00001	0.043	<0.0001	-	-	-
Anthracene by GCMS	0.00296	<0.00001	0.0296	<0.0001	-	-	-
Phenanthrene by GCMS	0.0211	<0.00001	0.211	<0.0001	-	-	-
Fluorene by GCMS	0.0159	<0.00001	0.159	<0.0001	-	-	-
Chrysene by GCMS	0.000573	<0.00001	0.00573	<0.0001	-	-	-
Pyrene by GCMS	0.00309	<0.00001	0.0309	<0.0001	-	-	-
Benz(a)anthracene by GCMS	0.000506	<0.00001	0.00506	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	0.0005	<0.00001	0.005	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	0.00049	<0.00001	0.0049	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	0.000341	<0.000004	0.00341	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000453	<0.00001	0.00453	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	0.00043	<0.00001	0.0043	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	0.000378	<0.00001	0.00378	<0.0001	-	-	-
PAH 16 EPA Total by GCMS	0.264	<0.000164	2.64	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	1.09	<0.05	10.9	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.014	<0.01	0.14	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.18
Conductivity (µS/cm)	452.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676258
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.029	<0.01	0.29	<0.1	-	-	-
Aliphatics >C10-C12	0.605	<0.01	6.05	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.026	<0.01	0.26	<0.1	-	-	-
Aromatics >EC10-EC12	0.403	<0.01	4.03	<0.1	-	-	-
Aromatics >EC12-EC16	0.038	<0.01	0.38	<0.1	-	-	-
Aromatics >EC16-EC21	0.021	<0.01	0.21	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.059	<0.01	0.59	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	1.15	<0.01	11.5	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.18
Conductivity (µS/cm)	452.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676263
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.12	<0.05	1.2	<0.5	-	-	-
Arsenic	0.000882	<0.0005	0.00882	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00132	<0.001	0.0132	<0.01	-	-	-
Copper	0.00646	<0.0003	0.0646	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000998	<0.0004	0.00998	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.275	<0.001	2.75	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.298	<0.00001	2.98	<0.0001	-	-	-
Acenaphthene by GCMS	0.00576	<0.000005	0.0576	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0693	<0.000005	0.693	<0.00005	-	-	-
Fluoranthene by GCMS	0.0124	<0.000005	0.124	<0.00005	-	-	-
Anthracene by GCMS	0.011	<0.000005	0.11	<0.00005	-	-	-
Phenanthrene by GCMS	0.0469	<0.000005	0.469	<0.00005	-	-	-
Fluorene by GCMS	0.0363	<0.000005	0.363	<0.00005	-	-	-
Chrysene by GCMS	0.000482	<0.000005	0.00482	<0.00005	-	-	-
Pyrene by GCMS	0.00863	<0.000005	0.0863	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000571	<0.000005	0.00571	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000708	<0.000005	0.000708	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000633	<0.000002	0.000633	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000797	<0.000005	0.0000797	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000243	<0.000005	0.000243	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.49	<0.000082	4.9	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.307	<0.05	3.07	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.25
Conductivity (µS/cm)	527.00
Temperature (°C)	21.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676263
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.171	<0.01	1.71	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.114	<0.01	1.14	<0.1	-	-	-
Aromatics >EC12-EC16	0.196	<0.01	1.96	<0.1	-	-	-
Aromatics >EC16-EC21	0.2	<0.01	2	<0.1	-	-	-
Aromatics >EC21-EC35	0.018	<0.01	0.18	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.414	<0.01	4.14	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.721	<0.01	7.21	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.25
Conductivity (µS/cm)	527.00
Temperature (°C)	21.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.132	**Natural Moisture Content (%)**	47.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	68
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676272
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D3
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	2.3	<0.2	23	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.073	<0.05	0.73	<0.5	-	-	-
Arsenic	0.00103	<0.0005	0.0103	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0277	<0.003	0.277	<0.03	-	-	-
Nickel	0.000723	<0.0004	0.00723	<0.004	-	-	-
Selenium	0.0021	<0.001	0.021	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00144	<0.00001	0.0144	<0.0001	-	-	-
Acenaphthene by GCMS	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000605	<0.000005	0.000605	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000303	<0.000005	0.000303	<0.00005	-	-	-
Anthracene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000779	<0.000005	0.000779	<0.00005	-	-	-
Fluorene by GCMS	0.0000739	<0.000005	0.000739	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000441	<0.000005	0.000441	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00185	<0.000082	0.0185	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	7.56
Conductivity (µS/cm)	266.00
Temperature (°C)	21.50
Volume Leachant (Litres)	0.858

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.132	**Natural Moisture Content (%)**	47.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	68
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676272
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D3
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	7.56
Conductivity (µS/cm)	266.00
Temperature (°C)	21.50
Volume Leachant (Litres)	0.858

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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676278
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.266	<0.2	2.66	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000298	<0.00001	0.000298	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000947	<0.0005	0.00947	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00326	<0.001	0.0326	<0.01	-	-	-
Copper	0.00462	<0.0003	0.0462	<0.003	-	-	-
Lead	0.000764	<0.0002	0.00764	<0.002	-	-	-
Manganese	0.011	<0.003	0.11	<0.03	-	-	-
Nickel	0.000762	<0.0004	0.00762	<0.004	-	-	-
Selenium	0.00113	<0.001	0.0113	<0.01	-	-	-
Vanadium	0.153	<0.001	1.53	<0.01	-	-	-
Zinc	0.00193	<0.001	0.0193	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00179	<0.00001	0.0179	<0.0001	-	-	-
Acenaphthene by GCMS	0.000251	<0.000005	0.00251	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00304	<0.000005	0.0304	<0.00005	-	-	-
Fluoranthene by GCMS	0.000666	<0.000005	0.00666	<0.00005	-	-	-
Anthracene by GCMS	0.000194	<0.000005	0.00194	<0.00005	-	-	-
Phenanthrene by GCMS	0.00099	<0.000005	0.0099	<0.00005	-	-	-
Fluorene by GCMS	0.0007	<0.000005	0.007	<0.00005	-	-	-
Chrysene by GCMS	0.0000299	<0.000005	0.000299	<0.00005	-	-	-
Pyrene by GCMS	0.000497	<0.000005	0.00497	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00818	<0.000082	0.0818	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.25
Conductivity (µS/cm)	571.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676278
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.081	<0.01	0.81	<0.1	-	-	-
Total Aliphatics >C12-C35	0.081	<0.01	0.81	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.083	<0.01	0.83	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.081	<0.01	0.81	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.25
Conductivity (µS/cm)	571.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.7
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676285
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.259	<0.2	2.59	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000274	<0.00001	0.000274	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00106	<0.0005	0.0106	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00266	<0.001	0.0266	<0.01	-	-	-
Copper	0.00713	<0.0003	0.0713	<0.003	-	-	-
Lead	0.00454	<0.0002	0.0454	<0.002	-	-	-
Manganese	0.105	<0.003	1.05	<0.03	-	-	-
Nickel	0.000945	<0.0004	0.00945	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.237	<0.001	2.37	<0.01	-	-	-
Zinc	0.0233	<0.001	0.233	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.448	<0.019	4.48	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.339	<0.00001	3.39	<0.0001	-	-	-
Acenaphthene by GCMS	0.00895	<0.000005	0.0895	<0.00005	-	-	-
Acenaphthylene by GCMS	0.139	<0.000005	1.39	<0.00005	-	-	-
Fluoranthene by GCMS	0.00654	<0.000005	0.0654	<0.00005	-	-	-
Anthracene by GCMS	0.00456	<0.000005	0.0456	<0.00005	-	-	-
Phenanthrene by GCMS	0.0373	<0.000005	0.373	<0.00005	-	-	-
Fluorene by GCMS	0.0367	<0.000005	0.367	<0.00005	-	-	-
Chrysene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Pyrene by GCMS	0.00408	<0.000005	0.0408	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00016	<0.000005	0.0016	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000455	<0.000005	0.000455	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000223	<0.000002	0.000223	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.577	<0.000082	5.77	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.59	<0.05	5.9	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.05
Conductivity (µS/cm)	425.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.7
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676285
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.012	<0.01	0.12	<0.1	-	-	-
Aliphatics >C10-C12	0.321	<0.01	3.21	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC10-EC12	0.214	<0.01	2.14	<0.1	-	-	-
Aromatics >EC12-EC16	0.248	<0.01	2.48	<0.1	-	-	-
Aromatics >EC16-EC21	0.106	<0.01	1.06	<0.1	-	-	-
Aromatics >EC21-EC35	0.01	<0.01	0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.364	<0.01	3.64	<0.1	-	-	-
Benzene by GC	0.007	<0.007	0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.955	<0.01	9.55	<0.1	-	-	-
Toluene by GC	0.004	<0.004	0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	0.003	<0.003	0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.05
Conductivity (µS/cm)	425.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.3
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676298
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00433	<0.0005	0.0433	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00416	<0.0003	0.0416	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000945	<0.0004	0.00945	<0.004	-	-	-
Selenium	0.0045	<0.001	0.045	<0.01	-	-	-
Vanadium	0.0633	<0.001	0.633	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000053	<0.00001	0.00053	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Fluoranthene by GCMS	0.000081	<0.000005	0.00081	<0.00005	-	-	-
Anthracene by GCMS	0.0000143	<0.000005	0.000143	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000729	<0.000005	0.000729	<0.00005	-	-	-
Fluorene by GCMS	0.0000164	<0.000005	0.000164	<0.00005	-	-	-
Chrysene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Pyrene by GCMS	0.0000709	<0.000005	0.000709	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000704	<0.000005	0.0000704	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000288	<0.000005	0.000288	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000174	<0.000002	0.000174	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000606	<0.000005	0.0000606	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000192	<0.000005	0.000192	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000444	<0.000082	0.00444	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	10.08
Conductivity (µS/cm)	246.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.3
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676298
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	10.08
Conductivity (µS/cm)	246.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	100
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676302
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00383	<0.001	0.0383	<0.01	-	-	-
Copper	0.00342	<0.0003	0.0342	<0.003	-	-	-
Lead	0.00506	<0.0002	0.0506	<0.002	-	-	-
Manganese	0.0482	<0.003	0.482	<0.03	-	-	-
Nickel	0.000491	<0.0004	0.00491	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00197	<0.001	0.0197	<0.01	-	-	-
Zinc	0.0326	<0.001	0.326	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.136	<0.019	1.36	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00306	<0.00001	0.0306	<0.0001	-	-	-
Acenaphthene by GCMS	0.000879	<0.000005	0.00879	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00191	<0.000005	0.0191	<0.00005	-	-	-
Fluoranthene by GCMS	0.00153	<0.000005	0.0153	<0.00005	-	-	-
Anthracene by GCMS	0.000402	<0.000005	0.00402	<0.00005	-	-	-
Phenanthrene by GCMS	0.00359	<0.000005	0.0359	<0.00005	-	-	-
Fluorene by GCMS	0.000549	<0.000005	0.00549	<0.00005	-	-	-
Chrysene by GCMS	0.0000327	<0.000005	0.000327	<0.00005	-	-	-
Pyrene by GCMS	0.00111	<0.000005	0.0111	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000374	<0.000005	0.000374	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000816	<0.000005	0.0000816	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000476	<0.000002	0.0000476	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0131	<0.000082	0.131	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.01
Conductivity (µS/cm)	4.82
Temperature (°C)	21.90
Volume Leachant (Litres)	0.900

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	100
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676302
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.012	<0.01	0.12	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.012	<0.01	0.12	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.041	<0.01	0.41	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.01
Conductivity (µS/cm)	4.82
Temperature (°C)	21.90
Volume Leachant (Litres)	0.900

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CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.2
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676309
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0023	<0.001	0.023	<0.01	-	-	-
Copper	0.00366	<0.0003	0.0366	<0.003	-	-	-
Lead	0.0622	<0.0002	0.622	<0.002	-	-	-
Manganese	0.0211	<0.003	0.211	<0.03	-	-	-
Nickel	0.000447	<0.0004	0.00447	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00177	<0.001	0.0177	<0.01	-	-	-
Zinc	0.0056	<0.001	0.056	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.421	<0.019	4.21	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00751	<0.00001	0.0751	<0.0001	-	-	-
Acenaphthene by GCMS	0.000667	<0.000005	0.00667	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000446	<0.000005	0.000446	<0.00005	-	-	-
Fluoranthene by GCMS	0.00236	<0.000005	0.0236	<0.00005	-	-	-
Anthracene by GCMS	0.000201	<0.000005	0.00201	<0.00005	-	-	-
Phenanthrene by GCMS	0.00584	<0.000005	0.0584	<0.00005	-	-	-
Fluorene by GCMS	0.0000633	<0.000005	0.000633	<0.00005	-	-	-
Chrysene by GCMS	0.000147	<0.000005	0.00147	<0.00005	-	-	-
Pyrene by GCMS	0.00161	<0.000005	0.0161	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000906	<0.000005	0.000906	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000315	<0.000005	0.000315	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000927	<0.000002	0.0000927	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0186	<0.000082	0.186	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	12.41
Conductivity (µS/cm)	7.22
Temperature (°C)	21.00
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.2
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676309
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.022	<0.01	0.22	<0.1	-	-	-
Aromatics >EC16-EC21	0.051	<0.01	0.51	<0.1	-	-	-
Aromatics >EC21-EC35	0.016	<0.01	0.16	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.089	<0.01	0.89	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.09	<0.01	0.9	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	12.41
Conductivity (µS/cm)	7.22
Temperature (°C)	21.00
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676314
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000205	<0.00001	0.000205	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00203	<0.001	0.0203	<0.01	-	-	-
Copper	0.00168	<0.0003	0.0168	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0248	<0.001	0.248	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000633	<0.00001	0.00633	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000712	<0.000005	0.000712	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000179	<0.000005	0.00179	<0.00005	-	-	-
Fluoranthene by GCMS	0.000612	<0.000005	0.00612	<0.00005	-	-	-
Anthracene by GCMS	0.0000514	<0.000005	0.000514	<0.00005	-	-	-
Phenanthrene by GCMS	0.000507	<0.000005	0.00507	<0.00005	-	-	-
Fluorene by GCMS	0.0000736	<0.000005	0.000736	<0.00005	-	-	-
Chrysene by GCMS	0.0000394	<0.000005	0.000394	<0.00005	-	-	-
Pyrene by GCMS	0.00057	<0.000005	0.0057	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000257	<0.000005	0.000257	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000501	<0.000002	0.0000501	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00278	<0.000082	0.0278	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.70
Conductivity (µS/cm)	1,250.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676314
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.70
Conductivity (µS/cm)	1,250.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676319
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.32	<0.2	13.2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00158	<0.0005	0.0158	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00236	<0.001	0.0236	<0.01	-	-	-
Copper	0.0172	<0.0003	0.172	<0.003	-	-	-
Lead	0.000381	<0.0002	0.00381	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00309	<0.0004	0.0309	<0.004	-	-	-
Selenium	0.00363	<0.001	0.0363	<0.01	-	-	-
Vanadium	0.0416	<0.001	0.416	<0.01	-	-	-
Zinc	0.00237	<0.001	0.0237	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.151	<0.00001	1.51	<0.0001	-	-	-
Acenaphthene by GCMS	0.0026	<0.000005	0.026	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000577	<0.000005	0.00577	<0.00005	-	-	-
Fluoranthene by GCMS	0.00162	<0.000005	0.0162	<0.00005	-	-	-
Anthracene by GCMS	0.00126	<0.000005	0.0126	<0.00005	-	-	-
Phenanthrene by GCMS	0.00525	<0.000005	0.0525	<0.00005	-	-	-
Fluorene by GCMS	0.00166	<0.000005	0.0166	<0.00005	-	-	-
Chrysene by GCMS	0.0000974	<0.000005	0.000974	<0.00005	-	-	-
Pyrene by GCMS	0.00113	<0.000005	0.0113	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000559	<0.000005	0.000559	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000576	<0.000005	0.0000576	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000103	<0.000002	0.000103	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.165	<0.000082	1.65	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.152	<0.05	1.52	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	907.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676319
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.084	<0.01	0.84	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.056	<0.01	0.56	<0.1	-	-	-
Aromatics >EC12-EC16	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics >EC16-EC21	0.024	<0.01	0.24	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.043	<0.01	0.43	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.195	<0.01	1.95	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	907.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676328
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000807	<0.0005	0.00807	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00771	<0.001	0.0771	<0.01	-	-	-
Copper	0.00549	<0.0003	0.0549	<0.003	-	-	-
Lead	0.000918	<0.0002	0.00918	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00057	<0.0004	0.0057	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00102	<0.001	0.0102	<0.01	-	-	-
Zinc	0.0031	<0.001	0.031	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000708	<0.00001	0.00708	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000213	<0.000005	0.000213	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Fluoranthene by GCMS	0.000856	<0.000005	0.00856	<0.00005	-	-	-
Anthracene by GCMS	0.0000584	<0.000005	0.000584	<0.00005	-	-	-
Phenanthrene by GCMS	0.000561	<0.000005	0.00561	<0.00005	-	-	-
Fluorene by GCMS	0.0000527	<0.000005	0.000527	<0.00005	-	-	-
Chrysene by GCMS	0.0000419	<0.000005	0.000419	<0.00005	-	-	-
Pyrene by GCMS	0.000805	<0.000005	0.00805	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000253	<0.000005	0.000253	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000184	<0.000005	0.000184	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000573	<0.000005	0.0000573	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000684	<0.000002	0.0000684	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00329	<0.000082	0.0329	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.18
Conductivity (µS/cm)	3,300.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676328
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.18
Conductivity (µS/cm)	3,300.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88.7
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676332
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00364	<0.001	0.0364	<0.01	-	-	-
Copper	0.00139	<0.0003	0.0139	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0251	<0.001	0.251	<0.01	-	-	-
Zinc	0.00104	<0.001	0.0104	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.151	<0.00005	1.51	<0.0005	-	-	-
Acenaphthene by GCMS	0.000329	<0.000025	0.00329	<0.00025	-	-	-
Acenaphthylene by GCMS	0.003	<0.000025	0.03	<0.00025	-	-	-
Fluoranthene by GCMS	0.000748	<0.000025	0.00748	<0.00025	-	-	-
Anthracene by GCMS	0.0004	<0.000025	0.004	<0.00025	-	-	-
Phenanthrene by GCMS	0.0019	<0.000025	0.019	<0.00025	-	-	-
Fluorene by GCMS	0.000755	<0.000025	0.00755	<0.00025	-	-	-
Chrysene by GCMS	0.000276	<0.000025	0.00276	<0.00025	-	-	-
Pyrene by GCMS	0.000679	<0.000025	0.00679	<0.00025	-	-	-
Benz(a)anthracene by GCMS	0.000227	<0.000025	0.00227	<0.00025	-	-	-
Benzo(b)fluoranthene by GCMS	0.00022	<0.000025	0.0022	<0.00025	-	-	-
Benzo(k)fluoranthene by GCMS	0.000198	<0.000025	0.00198	<0.00025	-	-	-
Benzo(a)pyrene by GCMS	0.000239	<0.00001	0.00239	<0.0001	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000147	<0.000025	0.00147	<0.00025	-	-	-
Benzo(ghi)perylene by GCMS	0.000144	<0.000025	0.00144	<0.00025	-	-	-
Indeno(123cd)pyrene by GCMS	0.000154	<0.000025	0.00154	<0.00025	-	-	-
PAH 16 EPA Total by GCMS	0.161	<0.00041	1.61	<0.0041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.69
Conductivity (µS/cm)	1,330.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88.7
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676332
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.017	<0.01	0.17	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.012	<0.01	0.12	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.039	<0.01	0.39	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.69
Conductivity (µS/cm)	1,330.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676342
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	3.51	<0.2	35.1	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00484	<0.0005	0.0484	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000791	<0.0003	0.00791	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0336	<0.003	0.336	<0.03	-	-	-
Nickel	0.00164	<0.0004	0.0164	<0.004	-	-	-
Selenium	0.00302	<0.001	0.0302	<0.01	-	-	-
Vanadium	0.0132	<0.001	0.132	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000589	<0.00001	0.000589	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000617	<0.000005	0.0000617	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000136	<0.000005	0.000136	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Fluorene by GCMS	0.00000514	<0.000005	0.0000514	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000113	<0.000082	0.00113	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	8.77
Conductivity (µS/cm)	230.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676342
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	8.77
Conductivity (µS/cm)	230.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.135	**Natural Moisture Content (%)**	50.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676346
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.04	<0.2	10.4	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0424	<0.0005	0.424	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00568	<0.0003	0.0568	<0.003	-	-	-
Lead	0.000576	<0.0002	0.00576	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00587	<0.0004	0.0587	<0.004	-	-	-
Selenium	0.011	<0.001	0.11	<0.01	-	-	-
Vanadium	0.49	<0.001	4.9	<0.01	-	-	-
Zinc	0.00705	<0.001	0.0705	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0189	<0.00002	0.189	<0.0002	-	-	-
Acenaphthene by GCMS	0.000114	<0.00001	0.00114	<0.0001	-	-	-
Acenaphthylene by GCMS	0.000163	<0.00001	0.00163	<0.0001	-	-	-
Fluoranthene by GCMS	0.000241	<0.00001	0.00241	<0.0001	-	-	-
Anthracene by GCMS	0.000138	<0.00001	0.00138	<0.0001	-	-	-
Phenanthrene by GCMS	0.000589	<0.00001	0.00589	<0.0001	-	-	-
Fluorene by GCMS	0.000281	<0.00001	0.00281	<0.0001	-	-	-
Chrysene by GCMS	0.000124	<0.00001	0.00124	<0.0001	-	-	-
Pyrene by GCMS	0.000184	<0.00001	0.00184	<0.0001	-	-	-
Benz(a)anthracene by GCMS	0.000113	<0.00001	0.00113	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	0.000114	<0.00001	0.00114	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	0.000108	<0.00001	0.00108	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	0.0000831	<0.000004	0.000831	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000706	<0.00001	0.000706	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	0.0000661	<0.00001	0.000661	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000668	<0.00001	0.000668	<0.0001	-	-	-
PAH 16 EPA Total by GCMS	0.0214	<0.000164	0.214	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.60
Conductivity (µS/cm)	319.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.855

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.135	**Natural Moisture Content (%)**	50.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676346
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.016	<0.01	0.16	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.60
Conductivity (µS/cm)	319.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.855

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676355
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000281	<0.00001	0.000281	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00272	<0.001	0.0272	<0.01	-	-	-
Copper	0.00531	<0.0003	0.0531	<0.003	-	-	-
Lead	0.00329	<0.0002	0.0329	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000501	<0.0004	0.00501	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00212	<0.001	0.0212	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0064	<0.00001	0.064	<0.0001	-	-	-
Acenaphthene by GCMS	0.000262	<0.000005	0.00262	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00143	<0.000005	0.0143	<0.00005	-	-	-
Fluoranthene by GCMS	0.00414	<0.000005	0.0414	<0.00005	-	-	-
Anthracene by GCMS	0.000764	<0.000005	0.00764	<0.00005	-	-	-
Phenanthrene by GCMS	0.00584	<0.000005	0.0584	<0.00005	-	-	-
Fluorene by GCMS	0.000956	<0.000005	0.00956	<0.00005	-	-	-
Chrysene by GCMS	0.000164	<0.000005	0.00164	<0.00005	-	-	-
Pyrene by GCMS	0.00325	<0.000005	0.0325	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000168	<0.000005	0.00168	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000483	<0.000005	0.000483	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000176	<0.000002	0.000176	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0235	<0.000082	0.235	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.27
Conductivity (µS/cm)	4,800.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676355
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.27
Conductivity (µS/cm)	4,800.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676360
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.47	<0.2	14.7	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00344	<0.001	0.0344	<0.01	-	-	-
Copper	0.0015	<0.0003	0.015	<0.003	-	-	-
Lead	0.000257	<0.0002	0.00257	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0201	<0.001	0.201	<0.01	-	-	-
Zinc	0.00134	<0.001	0.0134	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00274	<0.00001	0.0274	<0.0001	-	-	-
Acenaphthene by GCMS	0.000573	<0.000005	0.00573	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00102	<0.000005	0.0102	<0.00005	-	-	-
Fluoranthene by GCMS	0.00967	<0.000005	0.0967	<0.00005	-	-	-
Anthracene by GCMS	0.0013	<0.000005	0.013	<0.00005	-	-	-
Phenanthrene by GCMS	0.00323	<0.000005	0.0323	<0.00005	-	-	-
Fluorene by GCMS	0.000718	<0.000005	0.00718	<0.00005	-	-	-
Chrysene by GCMS	0.000337	<0.000005	0.00337	<0.00005	-	-	-
Pyrene by GCMS	0.00573	<0.000005	0.0573	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000392	<0.000005	0.00392	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000931	<0.000005	0.000931	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000266	<0.000005	0.000266	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000352	<0.000002	0.000352	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0259	<0.000082	0.259	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.83
Conductivity (µS/cm)	1,540.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676360
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC16-EC21	0.074	<0.01	0.74	<0.1	-	-	-
Aromatics >EC21-EC35	0.025	<0.01	0.25	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.115	<0.01	1.15	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.116	<0.01	1.16	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.83
Conductivity (µS/cm)	1,540.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676366
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00328	<0.001	0.0328	<0.01	-	-	-
Copper	0.00175	<0.0003	0.0175	<0.003	-	-	-
Lead	0.000763	<0.0002	0.00763	<0.002	-	-	-
Manganese	0.0485	<0.003	0.485	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0091	<0.001	0.091	<0.01	-	-	-
Zinc	0.0021	<0.001	0.021	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.127	<0.019	1.27	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00821	<0.00001	0.0821	<0.0001	-	-	-
Acenaphthene by GCMS	0.000302	<0.000005	0.00302	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00105	<0.000005	0.0105	<0.00005	-	-	-
Fluoranthene by GCMS	0.00457	<0.000005	0.0457	<0.00005	-	-	-
Anthracene by GCMS	0.000669	<0.000005	0.00669	<0.00005	-	-	-
Phenanthrene by GCMS	0.00567	<0.000005	0.0567	<0.00005	-	-	-
Fluorene by GCMS	0.000286	<0.000005	0.00286	<0.00005	-	-	-
Chrysene by GCMS	0.000156	<0.000005	0.00156	<0.00005	-	-	-
Pyrene by GCMS	0.00315	<0.000005	0.0315	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000382	<0.000005	0.000382	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000157	<0.000002	0.000157	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0242	<0.000082	0.242	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.97
Conductivity (µS/cm)	2,630.00
Temperature (°C)	21.30
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676366
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.058	<0.01	0.58	<0.1	-	-	-
Aromatics >EC21-EC35	0.017	<0.01	0.17	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.085	<0.01	0.85	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.087	<0.01	0.87	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.97
Conductivity (µS/cm)	2,630.00
Temperature (°C)	21.30
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676376
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.555	<0.2	5.55	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00116	<0.0005	0.0116	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00131	<0.001	0.0131	<0.01	-	-	-
Copper	0.00413	<0.0003	0.0413	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00137	<0.0004	0.0137	<0.004	-	-	-
Selenium	0.00405	<0.001	0.0405	<0.01	-	-	-
Vanadium	0.514	<0.001	5.14	<0.01	-	-	-
Zinc	0.00831	<0.001	0.0831	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00309	<0.00001	0.0309	<0.0001	-	-	-
Acenaphthene by GCMS	0.0021	<0.000005	0.021	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00224	<0.000005	0.0224	<0.00005	-	-	-
Anthracene by GCMS	0.000821	<0.000005	0.00821	<0.00005	-	-	-
Phenanthrene by GCMS	0.00473	<0.000005	0.0473	<0.00005	-	-	-
Fluorene by GCMS	0.00125	<0.000005	0.0125	<0.00005	-	-	-
Chrysene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Pyrene by GCMS	0.00153	<0.000005	0.0153	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000776	<0.000005	0.000776	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000285	<0.000005	0.000285	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000014	<0.000005	0.00014	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000179	<0.000002	0.000179	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000068	<0.000005	0.000068	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.016	<0.000082	0.16	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.07	<0.05	0.7	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.24
Conductivity (µS/cm)	573.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676376
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.031	<0.01	0.31	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.021	<0.01	0.21	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.07	<0.01	0.7	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.24
Conductivity (µS/cm)	573.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676384
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D1
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000639	<0.0005	0.00639	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00606	<0.001	0.0606	<0.01	-	-	-
Copper	0.00208	<0.0003	0.0208	<0.003	-	-	-
Lead	0.000496	<0.0002	0.00496	<0.002	-	-	-
Manganese	0.0166	<0.003	0.166	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00197	<0.001	0.0197	<0.01	-	-	-
Zinc	0.00522	<0.001	0.0522	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00112	<0.00001	0.0112	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000378	<0.000005	0.000378	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000295	<0.000005	0.00295	<0.00005	-	-	-
Fluoranthene by GCMS	0.000418	<0.000005	0.00418	<0.00005	-	-	-
Anthracene by GCMS	0.0000828	<0.000005	0.000828	<0.00005	-	-	-
Phenanthrene by GCMS	0.000519	<0.000005	0.00519	<0.00005	-	-	-
Fluorene by GCMS	0.0000853	<0.000005	0.000853	<0.00005	-	-	-
Chrysene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Pyrene by GCMS	0.000325	<0.000005	0.00325	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0029	<0.000082	0.029	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	3,030.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676384
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D1
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	3,030.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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16:25:27 18/06/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676388
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00136	<0.001	0.0136	<0.01	-	-	-
Copper	0.00276	<0.0003	0.0276	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000829	<0.0004	0.00829	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0358	<0.001	0.358	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000521	<0.00001	0.00521	<0.0001	-	-	-
Acenaphthene by GCMS	0.000168	<0.000005	0.00168	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00068	<0.000005	0.0068	<0.00005	-	-	-
Fluoranthene by GCMS	0.000424	<0.000005	0.00424	<0.00005	-	-	-
Anthracene by GCMS	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Phenanthrene by GCMS	0.00116	<0.000005	0.0116	<0.00005	-	-	-
Fluorene by GCMS	0.000253	<0.000005	0.00253	<0.00005	-	-	-
Chrysene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Pyrene by GCMS	0.000346	<0.000005	0.00346	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00371	<0.000082	0.0371	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.57
Conductivity (µS/cm)	838.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
18/06/2018 16:26:12

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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676388
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.57
Conductivity (µS/cm)	838.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.8
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676398
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00288	<0.001	0.0288	<0.01	-	-	-
Copper	0.005	<0.0003	0.05	<0.003	-	-	-
Lead	0.000457	<0.0002	0.00457	<0.002	-	-	-
Manganese	0.00556	<0.003	0.0556	<0.03	-	-	-
Nickel	0.000981	<0.0004	0.00981	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0229	<0.001	0.229	<0.01	-	-	-
Zinc	0.00942	<0.001	0.0942	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0825	<0.00001	0.825	<0.0001	-	-	-
Acenaphthene by GCMS	0.00419	<0.000005	0.0419	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0467	<0.000005	0.467	<0.00005	-	-	-
Fluoranthene by GCMS	0.00638	<0.000005	0.0638	<0.00005	-	-	-
Anthracene by GCMS	0.00464	<0.000005	0.0464	<0.00005	-	-	-
Phenanthrene by GCMS	0.0242	<0.000005	0.242	<0.00005	-	-	-
Fluorene by GCMS	0.0141	<0.000005	0.141	<0.00005	-	-	-
Chrysene by GCMS	0.000179	<0.000005	0.00179	<0.00005	-	-	-
Pyrene by GCMS	0.0044	<0.000005	0.044	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000193	<0.000005	0.00193	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000506	<0.000005	0.000506	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000276	<0.000002	0.000276	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000575	<0.000005	0.0000575	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000123	<0.000005	0.000123	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.188	<0.000082	1.88	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.099	<0.05	0.99	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.67
Conductivity (µS/cm)	1,200.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.8
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676398
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.049	<0.01	0.49	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.033	<0.01	0.33	<0.1	-	-	-
Aromatics >EC12-EC16	0.095	<0.01	0.95	<0.1	-	-	-
Aromatics >EC16-EC21	0.084	<0.01	0.84	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.179	<0.01	1.79	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.275	<0.01	2.75	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.67
Conductivity (µS/cm)	1,200.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676406
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000298	<0.00001	0.000298	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0118	<0.0003	0.118	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00121	<0.0004	0.0121	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0339	<0.001	0.339	<0.01	-	-	-
Zinc	0.00115	<0.001	0.0115	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000825	<0.00001	0.00825	<0.0001	-	-	-
Acenaphthene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000173	<0.000005	0.00173	<0.00005	-	-	-
Fluoranthene by GCMS	0.000443	<0.000005	0.00443	<0.00005	-	-	-
Anthracene by GCMS	0.000073	<0.000005	0.00073	<0.00005	-	-	-
Phenanthrene by GCMS	0.000386	<0.000005	0.00386	<0.00005	-	-	-
Fluorene by GCMS	0.0000453	<0.000005	0.000453	<0.00005	-	-	-
Chrysene by GCMS	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Pyrene by GCMS	0.000381	<0.000005	0.00381	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000522	<0.000005	0.000522	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000943	<0.000002	0.000943	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000228	<0.000005	0.000228	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000759	<0.000005	0.000759	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00305	<0.000082	0.0305	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.61
Conductivity (µS/cm)	977.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676406
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.61
Conductivity (µS/cm)	977.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
18/06/2018 16:26:12

16:25:27 18/06/2018

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

Test Completion Dates

Lab Sample No(s)	17676298	17676302	17676309	17676319	17676328	17676332	17676342	17676346	17676355	17676360
Customer Sample Ref.	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C2	TP3B-C2	TP3B-C2	TP3B-C2	TP3B-C3	TP3B-C3
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.30 - 0.30	1.00 - 1.00	2.00 - 2.00	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	12-Jun-2018		12-Jun-2018		07-Jun-2018		07-Jun-2018		12-Jun-2018	
Ammoniacal Nitrogen	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018
Ammonium Soil by Titration	12-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	11-Jun-2018
Anions by Kone (soil)	12-Jun-2018		12-Jun-2018		12-Jun-2018		12-Jun-2018		12-Jun-2018	
Asbestos ID in Solid Samples	08-Jun-2018		08-Jun-2018		08-Jun-2018		08-Jun-2018		11-Jun-2018	
CEN 10:1 Leachate (1 Stage)	06-Jun-2018	05-Jun-2018	06-Jun-2018	06-Jun-2018	06-Jun-2018	05-Jun-2018	06-Jun-2018	12-Jun-2018	12-Jun-2018	05-Jun-2018
CEN Readings	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	13-Jun-2018	13-Jun-2018	07-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	13-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
Dissolved Metals by ICP-MS	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	11-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
EPH CWG (Aliphatic) GC (S)	07-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	11-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
EPH CWG (Aromatic) GC (S)	07-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
GRO by GC-FID (S)	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018
GRO by GC-FID (W)	12-Jun-2018	08-Jun-2018	12-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018
Mercury Dissolved	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Metals in solid samples by OES	08-Jun-2018	07-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018
PAH by GCMS	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018
PAH Spec MS - Aqueous (W)	08-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	13-Jun-2018	13-Jun-2018	11-Jun-2018
pH	11-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	06-Jun-2018	06-Jun-2018
pH Value	13-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018
Phenols by HPLC (S)	11-Jun-2018	08-Jun-2018	12-Jun-2018	08-Jun-2018	11-Jun-2018	13-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
Sample description	05-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018	05-Jun-2018	05-Jun-2018
Total Organic Carbon	11-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	06-Jun-2018
Total Sulphate	07-Jun-2018		07-Jun-2018		05-Jun-2018		06-Jun-2018		06-Jun-2018	
Total Sulphur	12-Jun-2018		12-Jun-2018		05-Jun-2018		11-Jun-2018		11-Jun-2018	
TPH CWG (W)	12-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
TPH CWG GC (S)	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018
VOC MS (S)	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018

Lab Sample No(s)	17676366	17676376	17676324	17676350	17676380	17676384	17676388	17676398	17676223	17676231
Customer Sample Ref.	TP3B-C3	TP3B-C3	TP3B-C1-V	TP3B-C2-V	TP3B-C3-V	TP3B-D1	TP3B-D1	TP3B-D1	TP3B-D2	TP3B-D2
AGS Ref.										
Depth	2.00 - 2.00	3.00 - 3.00	4.10 - 4.10	3.80 - 3.80	3.30 - 3.30	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	0.40 - 0.40	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	12-Jun-2018						12-Jun-2018		12-Jun-2018	
Ammoniacal Nitrogen	13-Jun-2018	13-Jun-2018				12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018
Ammonium Soil by Titration	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
Anions by Kone (soil)	12-Jun-2018						12-Jun-2018		12-Jun-2018	
Asbestos ID in Solid Samples	11-Jun-2018						11-Jun-2018		11-Jun-2018	
Asbestos Quantification - Full	14-Jun-2018									
CEN 10:1 Leachate (1 Stage)	06-Jun-2018	06-Jun-2018				05-Jun-2018	12-Jun-2018	06-Jun-2018	05-Jun-2018	06-Jun-2018
CEN Readings	07-Jun-2018	07-Jun-2018				07-Jun-2018	13-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
Dissolved Metals by ICP-MS	11-Jun-2018	12-Jun-2018				12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	12-Jun-2018	11-Jun-2018				11-Jun-2018	12-Jun-2018	09-Jun-2018	12-Jun-2018	11-Jun-2018
EPH CWG (Aliphatic) GC (S)	07-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	12-Jun-2018	11-Jun-2018				11-Jun-2018	12-Jun-2018	09-Jun-2018	12-Jun-2018	11-Jun-2018
EPH CWG (Aromatic) GC (S)	07-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018
GRO by GC-FID (S)	11-Jun-2018	13-Jun-2018	12-Jun-2018	11-Jun-2018	13-Jun-2018	13-Jun-2018	11-Jun-2018	11-Jun-2018	13-Jun-2018	08-Jun-2018
GRO by GC-FID (W)	11-Jun-2018	11-Jun-2018				12-Jun-2018	08-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018
Mercury Dissolved	08-Jun-2018	08-Jun-2018				08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Metals in solid samples by OES	08-Jun-2018	08-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018	08-Jun-2018
PAH by GCMS	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018
PAH Spec MS - Aqueous (W)	11-Jun-2018	08-Jun-2018				08-Jun-2018	13-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018
pH	06-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	06-Jun-2018	06-Jun-2018	12-Jun-2018	06-Jun-2018	12-Jun-2018
pH Value	12-Jun-2018	13-Jun-2018				11-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	13-Jun-2018
Phenols by HPLC (S)	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	12-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	12-Jun-2018
Sample description	05-Jun-2018	05-Jun-2018	05-Jun-2018	06-Jun-2018	06-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018
Total Organic Carbon	11-Jun-2018	11-Jun-2018	06-Jun-2018	11-Jun-2018	12-Jun-2018	06-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018
Total Sulphate	07-Jun-2018						06-Jun-2018		06-Jun-2018	
Total Sulphur	12-Jun-2018						12-Jun-2018		11-Jun-2018	
TPH CWG (W)	12-Jun-2018	11-Jun-2018				12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
TPH CWG GC (S)	11-Jun-2018	13-Jun-2018	12-Jun-2018	11-Jun-2018	13-Jun-2018	13-Jun-2018	11-Jun-2018	11-Jun-2018	13-Jun-2018	08-Jun-2018
VOC MS (S)	13-Jun-2018	13-Jun-2018	07-Jun-2018	08-Jun-2018	11-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Lab Sample No(s)	17676235	17676239	17676272	17676278	17676285	17676402	17676244	17676294	17676203	17676254
Customer Sample Ref.	TP3B-D2	TP3B-D2	TP3B-D3	TP3B-D3	TP3B-D3	TP3B-D1-V	TP3B-D2-V	TP3B-D3-V	TP3B-E1	TP3B-E1
AGS Ref.										
Depth	2.00 - 2.00	2.80 - 2.80	0.30 - 0.30	1.00 - 1.00	2.00 - 2.00	2.60 - 2.60	3.00 - 3.00	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	12-Jun-2018			12-Jun-2018					12-Jun-2018	
Ammoniacal Nitrogen	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018				13-Jun-2018	12-Jun-2018
Ammonium Soil by Titration	12-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
Anions by Kone (soil)	12-Jun-2018			12-Jun-2018					12-Jun-2018	
Asbestos ID in Solid Samples	06-Jun-2018			11-Jun-2018					08-Jun-2018	
Asbestos Quantification - Full				15-Jun-2018						
CEN 10:1 Leachate (1 Stage)	06-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018				06-Jun-2018	05-Jun-2018
CEN Readings	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018				07-Jun-2018	07-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
Dissolved Metals by ICP-MS	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018				12-Jun-2018	12-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	09-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018				11-Jun-2018	09-Jun-2018
EPH CWG (Aliphatic) GC (S)	07-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	09-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018				11-Jun-2018	09-Jun-2018
EPH CWG (Aromatic) GC (S)	07-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018
GRO by GC-FID (S)	13-Jun-2018	08-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018	12-Jun-2018	11-Jun-2018	11-Jun-2018
GRO by GC-FID (W)	11-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018				11-Jun-2018	13-Jun-2018
Mercury Dissolved	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018				08-Jun-2018	08-Jun-2018
Metals in solid samples by OES	07-Jun-2018	08-Jun-2018	08-Jun-2018	07-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
PAH by GCMS	07-Jun-2018	07-Jun-2018	12-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018
PAH Spec MS - Aqueous (W)	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018				08-Jun-2018	08-Jun-2018
pH	11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018
pH Value	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018				13-Jun-2018	12-Jun-2018
Phenols by HPLC (S)	08-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Sample description	05-Jun-2018	05-Jun-2018	04-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	06-Jun-2018	04-Jun-2018	05-Jun-2018	05-Jun-2018
Total Organic Carbon	08-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
Total Sulphate	06-Jun-2018			06-Jun-2018					07-Jun-2018	
Total Sulphur	12-Jun-2018			12-Jun-2018					12-Jun-2018	
TPH CWG (W)	11-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018				11-Jun-2018	13-Jun-2018
TPH CWG GC (S)	13-Jun-2018	08-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018	12-Jun-2018	11-Jun-2018	11-Jun-2018
VOC MS (S)	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018	13-Jun-2018	13-Jun-2018

Lab Sample No(s)	17676314	17676207	17676211	17676215	17676406	17676249	17676258	17676263	17676370	17676219
Customer Sample Ref.	TP3B-E1	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E3	TP3B-E3	TP3B-E3	TP3B-E1-V	TP3B-E2-V
AGS Ref.										
Depth	2.00 - 2.00	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.20 - 2.20	3.00 - 3.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	12-Jun-2018		12-Jun-2018		12-Jun-2018	12-Jun-2018		12-Jun-2018		
Ammoniacal Nitrogen	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018		
Ammonium Soil by Titration	12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018
Anions by Kone (soil)	12-Jun-2018		12-Jun-2018		12-Jun-2018	12-Jun-2018		12-Jun-2018		
Asbestos ID in Solid Samples	11-Jun-2018		11-Jun-2018		11-Jun-2018	11-Jun-2018		11-Jun-2018		
Asbestos Quantification - Full					14-Jun-2018					
CEN 10:1 Leachate (1 Stage)	05-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	05-Jun-2018		
CEN Readings	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	13-Jun-2018	07-Jun-2018	13-Jun-2018	07-Jun-2018		
Cyanide Comp/Free/Total/Thiocyanate	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
Dissolved Metals by ICP-MS	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018		
EPH CWG (Aliphatic) Aqueous GC (W)	12-Jun-2018	11-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018		
EPH CWG (Aliphatic) GC (S)	11-Jun-2018	07-Jun-2018	11-Jun-2018	07-Jun-2018	07-Jun-2018	12-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	12-Jun-2018	11-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018		
EPH CWG (Aromatic) GC (S)	11-Jun-2018	07-Jun-2018	11-Jun-2018	07-Jun-2018	07-Jun-2018	12-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018
GRO by GC-FID (S)	11-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	11-Jun-2018	12-Jun-2018	13-Jun-2018	11-Jun-2018	13-Jun-2018
GRO by GC-FID (W)	08-Jun-2018	11-Jun-2018	13-Jun-2018	08-Jun-2018	08-Jun-2018	13-Jun-2018	08-Jun-2018	11-Jun-2018		
Mercury Dissolved	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018		
Metals in solid samples by OES	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018
PAH by GCMS	07-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018	08-Jun-2018	07-Jun-2018	08-Jun-2018
PAH Spec MS - Aqueous (W)	11-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	13-Jun-2018	08-Jun-2018	13-Jun-2018	08-Jun-2018		
pH	06-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	06-Jun-2018	12-Jun-2018
pH Value	12-Jun-2018	13-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	13-Jun-2018		
Phenols by HPLC (S)	11-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018
Sample description	05-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018
Total Organic Carbon	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	12-Jun-2018	08-Jun-2018	06-Jun-2018	06-Jun-2018
Total Sulphate	06-Jun-2018		06-Jun-2018		06-Jun-2018	06-Jun-2018		06-Jun-2018		
Total Sulphur	12-Jun-2018		12-Jun-2018		11-Jun-2018	12-Jun-2018		12-Jun-2018		
TPH CWG (W)	12-Jun-2018	11-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	11-Jun-2018		
TPH CWG GC (S)	11-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	11-Jun-2018	13-Jun-2018
VOC MS (S)	13-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	08-Jun-2018	08-Jun-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

Lab Sample No(s)	17676267
Customer Sample Ref.	TP3B-E3-V
AGS Ref.	
Depth	2.30 - 2.30
Type	Soil/Solid (S)

Ammonium Soil by Titration	11-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	12-Jun-2018
EPH CWG (Aliphatic) GC (S)	08-Jun-2018
EPH CWG (Aromatic) GC (S)	08-Jun-2018
GRO by GC-FID (S)	12-Jun-2018
Metals in solid samples by OES	11-Jun-2018
PAH by GCMS	07-Jun-2018
pH	12-Jun-2018
Phenols by HPLC (S)	12-Jun-2018
Sample description	05-Jun-2018
Total Organic Carbon	12-Jun-2018
TPH CWG GC (S)	12-Jun-2018
VOC MS (S)	07-Jun-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors
employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjecte to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
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SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	18 June 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180604-4
Your Reference:	
Location:	Llanwern
Report No:	460640

This report has been revised and directly supersedes 460481 in its entirety.

We received 41 samples on Monday June 04, 2018 and 41 of these samples were scheduled for analysis which was completed on Friday June 15, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17676298	TP3B-C1		0.50 - 0.50	01/06/2018
17676302	TP3B-C1		1.00 - 1.00	01/06/2018
17676309	TP3B-C1		2.00 - 2.00	01/06/2018
17676319	TP3B-C1		3.00 - 3.00	01/06/2018
17676328	TP3B-C2		0.30 - 0.30	01/06/2018
17676332	TP3B-C2		1.00 - 1.00	01/06/2018
17676342	TP3B-C2		2.00 - 2.00	01/06/2018
17676346	TP3B-C2		3.50 - 3.50	01/06/2018
17676355	TP3B-C3		0.50 - 0.50	01/06/2018
17676360	TP3B-C3		1.00 - 1.00	01/06/2018
17676366	TP3B-C3		2.00 - 2.00	01/06/2018
17676376	TP3B-C3		3.00 - 3.00	01/06/2018
17676324	TP3B-C1-V		4.10 - 4.10	01/06/2018
17676350	TP3B-C2-V		3.80 - 3.80	01/06/2018
17676380	TP3B-C3-V		3.30 - 3.30	01/06/2018
17676384	TP3B-D1		0.40 - 0.40	01/06/2018
17676388	TP3B-D1		1.00 - 1.00	01/06/2018
17676398	TP3B-D1		2.00 - 2.00	01/06/2018
17676223	TP3B-D2		0.40 - 0.40	01/06/2018
17676231	TP3B-D2		1.00 - 1.00	01/06/2018
17676235	TP3B-D2		2.00 - 2.00	01/06/2018
17676239	TP3B-D2		2.80 - 2.80	01/06/2018
17676272	TP3B-D3		0.30 - 0.30	01/06/2018
17676278	TP3B-D3		1.00 - 1.00	01/06/2018
17676285	TP3B-D3		2.00 - 2.00	01/06/2018
17676402	TP3B-D1-V		2.60 - 2.60	01/06/2018
17676244	TP3B-D2-V		3.00 - 3.00	01/06/2018
17676294	TP3B-D3-V		2.40 - 2.40	01/06/2018
17676203	TP3B-E1		0.50 - 0.50	01/06/2018
17676254	TP3B-E1		1.00 - 1.00	01/06/2018
17676314	TP3B-E1		2.00 - 2.00	01/06/2018
17676406	TP3B-E2		0.50 - 0.50	01/06/2018
17676207	TP3B-E2		1.00 - 1.00	01/06/2018
17676211	TP3B-E2		2.00 - 2.00	01/06/2018
17676215	TP3B-E2		2.90 - 2.90	01/06/2018
17676249	TP3B-E3		0.50 - 0.50	01/06/2018
17676258	TP3B-E3		1.00 - 1.00	01/06/2018
17676263	TP3B-E3		2.00 - 2.00	01/06/2018
17676370	TP3B-E1-V		2.20 - 2.20	01/06/2018
17676219	TP3B-E2-V		3.00 - 3.00	01/06/2018
17676267	TP3B-E3-V		2.30 - 2.30	01/06/2018

Maximum Sample/Coolbox Temperature (°C) : **16**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	17676298			17676302			17676309			17676319			17676328			17676332			17676342
			Customer Sample Reference	TP3B-C1			TP3B-C1			TP3B-C1			TP3B-C1			TP3B-C2			TP3B-C2			TP3B-C2
			AGS Reference																			
			Depth (m)	0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			3.00 - 3.00			0.30 - 0.30			1.00 - 1.00			2.00 - 2.00
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 16			X						X						X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 16			X						X						X					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16		X						X						X						X
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3																				
CEN Readings	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 73		X	X		X	X		X	X		X	X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41				X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X

17676350	TP3B-C2-V		3.80 - 3.80	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
17676324	TP3B-C1-V		4.10 - 4.10	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
17676376	TP3B-C3		3.00 - 3.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X			X					X
17676366	TP3B-C3		2.00 - 2.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X	X	X	X	X	X			X					X
17676360	TP3B-C3		1.00 - 1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X			X					X
17676355	TP3B-C3		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X		X	X	X	X			X					X
17676346	TP3B-C2		3.50 - 3.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X			X					X
17676342	TP3B-C2		2.00 - 2.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	17676298			17676302			17676309			17676319			17676328			17676332			17676342
			Customer Sample Reference	TP3B-C1			TP3B-C1			TP3B-C1			TP3B-C1			TP3B-C2			TP3B-C2			TP3B-C2
			AGS Reference																			
			Depth (m)	0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			3.00 - 3.00			0.30 - 0.30			1.00 - 1.00			2.00 - 2.00
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
pH	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
Sample description	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 16			X						X						X					
Total Sulphur	All	NDPs: 0 Tests: 16			X						X						X					
TPH CWG (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 42				X			X			X			X			X			X		

| 17676350 | TP3B-C2-V | | 3.80 - 3.80 | 60g VOC (ALE215) | S | | |

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	17676380	17676384	17676388	17676398	17676223	17676231	17676235
			Customer Sample Reference	TP3B-C3-V	TP3B-D1	TP3B-D1	TP3B-D1	TP3B-D2	TP3B-D2	TP3B-D2
			AGS Reference							
			Depth (m)	3.30 - 3.30	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00
			Container	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 16						X					X									X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 32			X			X			X			X			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 16						X					X									X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16					X					X									X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3																				
CEN Readings	All	NDPs: 0 Tests: 32			X		X			X			X			X			X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 73	X		X	X	X	X		X	X		X	X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 32			X		X			X			X			X			X			
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32			X		X			X			X			X			X			
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32			X		X			X			X			X			X			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41		X			X			X			X			X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 32			X		X			X			X			X			X			

17676203	TP3B-E1		0.50 - 0.50	250g Amber Jar (ALE210)	S		x			x		x					x				x				x	
				1kg TUB	S			x					x			x		x		x			x			x
17676294	TP3B-D3-V		2.40 - 2.40	60g VOC (ALE215)	S																				x	
				250g Amber Jar (ALE210)	S					x							x				x						
17676244	TP3B-D2-V		3.00 - 3.00	60g VOC (ALE215)	S																				x	
				250g Amber Jar (ALE210)	S					x							x				x						
17676402	TP3B-D1-V		2.60 - 2.60	60g VOC (ALE215)	S																				x	
				250g Amber Jar (ALE210)	S					x							x				x						
17676285	TP3B-D3		2.00 - 2.00	60g VOC (ALE215)	S																				x	
				250g Amber Jar (ALE210)	S					x							x				x						
				1kg TUB	S			x						x		x		x		x			x			x
17676278	TP3B-D3		1.00 - 1.00	60g VOC (ALE215)	S																				x	
				250g Amber Jar (ALE210)	S		x			x		x					x				x						
				1kg TUB	S			x				x		x		x		x		x			x			x
17676272	TP3B-D3		0.30 - 0.30	60g VOC (ALE215)	S																				x	
				250g Amber Jar (ALE210)	S					x							x				x						
				1kg TUB	S			x						x		x		x		x			x			x
17676239	TP3B-D2		2.80 - 2.80	60g VOC (ALE215)	S																				x	
				250g Amber Jar (ALE210)	S					x							x				x						
				1kg TUB	S			x						x		x		x		x			x			x
17676235	TP3B-D2		2.00 - 2.00	60g VOC (ALE215)	S																				x	

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	17676380	17676384	17676388	17676398	17676223	17676231	17676235
			Customer Sample Reference	TP3B-C3-V	TP3B-D1	TP3B-D1	TP3B-D1	TP3B-D2	TP3B-D2	TP3B-D2
			AGS Reference							
			Depth (m)	3.30 - 3.30	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00
			Container	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 32			X			X			X			X			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 32			X			X			X			X			X			X		
pH	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
pH Value	All	NDPs: 0 Tests: 32			X			X			X			X			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
Sample description	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 16						X						X							X	
Total Sulphur	All	NDPs: 0 Tests: 16						X						X							X	
TPH CWG (W)	All	NDPs: 0 Tests: 32			X			X			X			X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 42		X			X			X			X			X			X				

17676203	TP3B-E1		0.50 - 0.50	250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x	
				1kg TUB	S	x			x		x							x		
17676294	TP3B-D3-V		2.40 - 2.40	60g VOC (ALE215)	S															x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
17676244	TP3B-D2-V		3.00 - 3.00	60g VOC (ALE215)	S															x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
17676402	TP3B-D1-V		2.60 - 2.60	60g VOC (ALE215)	S															x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
17676285	TP3B-D3		2.00 - 2.00	60g VOC (ALE215)	S															x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
				1kg TUB	S	x			x		x							x		
17676278	TP3B-D3		1.00 - 1.00	60g VOC (ALE215)	S															x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x	
				1kg TUB	S	x			x		x							x		
17676272	TP3B-D3		0.30 - 0.30	60g VOC (ALE215)	S															x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
				1kg TUB	S	x			x		x							x		
17676239	TP3B-D2		2.80 - 2.80	60g VOC (ALE215)	S															x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
				1kg TUB	S	x			x		x							x		
17676235	TP3B-D2		2.00 - 2.00	60g VOC (ALE215)	S															x

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17676203	17676254			17676314			17676406			17676207			17676211			17676215		
Customer Sample Reference			TP3B-E1	TP3B-E1			TP3B-E1			TP3B-E2			TP3B-E2			TP3B-E2			TP3B-E2		
AGS Reference																					
Depth (m)			0.50 - 0.50	1.00 - 1.00			2.00 - 2.00			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			2.90 - 2.90		
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 16						X			X						X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 16						X			X						X					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16					X			X						X						
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3								X												
CEN Readings	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 73		X	X		X	X		X	X		X	X		X	X		X	X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41	X			X			X			X			X			X				X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X			

17676267	TP3B-E3-V		2.30 - 2.30	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
17676219	TP3B-E2-V		3.00 - 3.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
17676370	TP3B-E1-V		2.20 - 2.20	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
17676263	TP3B-E3		2.00 - 2.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X		X	X	X	X			X					X
17676258	TP3B-E3		1.00 - 1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X			X					X
17676249	TP3B-E3		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X		X	X	X	X			X					X

Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**	**Report Number:** 460640
Location:	Llanwern	**Order Number:** LLA441	**Superseded Report:** 460481

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17676203	17676254			17676314			17676406			17676207			17676211			17676215	
Customer Sample Reference			TP3B-E1	TP3B-E1			TP3B-E1			TP3B-E2			TP3B-E2			TP3B-E2			TP3B-E2	
AGS Reference																				
Depth (m)			0.50 - 0.50	1.00 - 1.00			2.00 - 2.00			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			2.90 - 2.90	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 32		X			X			X			X			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X		
pH	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
pH Value	All	NDPs: 0 Tests: 32		X			X			X			X			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
Sample description	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 16						X			X						X				
Total Sulphur	All	NDPs: 0 Tests: 16						X			X						X				
TPH CWG (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 42	X			X			X			X			X		X	X			X

| 17676267 | TP3B-E3-V | | 2.30 - 2.30 | 60g VOC (ALE215) | S | | |

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17676298	TP3B-C1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17676302	TP3B-C1	1.00 - 1.00	Dark Brown	Loamy Sand	Crushed Brick	Stones
17676309	TP3B-C1	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Vegetation
17676319	TP3B-C1	3.00 - 3.00	Dark Brown	Loamy Sand	Crushed Brick	Stones
17676328	TP3B-C2	0.30 - 0.30	Black	Loamy Sand	Stones	None
17676332	TP3B-C2	1.00 - 1.00	Black	Loamy Sand	Stones	None
17676342	TP3B-C2	2.00 - 2.00	Dark Brown	Silt Loam	Stones	None
17676346	TP3B-C2	3.50 - 3.50	Dark Brown	Silt Loam	Stones	None
17676355	TP3B-C3	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17676360	TP3B-C3	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	None
17676366	TP3B-C3	2.00 - 2.00	Black	Stone/Soil	Stones	None
17676376	TP3B-C3	3.00 - 3.00	Dark Brown	Loamy Sand	Crushed Brick	Stones
17676324	TP3B-C1-V	4.10 - 4.10	Dark Brown	Sandy Clay Loam	Stones	Vegetation
17676350	TP3B-C2-V	3.80 - 3.80	Dark Brown	Loamy Sand	Stones	Vegetation
17676380	TP3B-C3-V	3.30 - 3.30	Dark Brown	Loamy Sand	Vegetation	None
17676384	TP3B-D1	0.40 - 0.40	Black	Sand	Stones	None
17676388	TP3B-D1	1.00 - 1.00	Black	Sand	Stones	None
17676398	TP3B-D1	2.00 - 2.00	Black	Loamy Sand	Crushed Brick	Stones
17676223	TP3B-D2	0.40 - 0.40	Dark Brown	Loamy Sand	Stones	None
17676231	TP3B-D2	1.00 - 1.00	Black	Loamy Sand	Crushed Brick	Stones
17676235	TP3B-D2	2.00 - 2.00	Dark Brown	Stone/Soil	Stones	None
17676239	TP3B-D2	2.80 - 2.80	Dark Brown	Loamy Sand	Stones	Vegetation
17676272	TP3B-D3	0.30 - 0.30	Black	Silt Loam	Stones	None
17676278	TP3B-D3	1.00 - 1.00	Dark Brown	Sand	None	Stones
17676285	TP3B-D3	2.00 - 2.00	Dark Brown	Sand	Stones	Vegetation
17676402	TP3B-D1-V	2.60 - 2.60	Dark Brown	Sandy Clay Loam	Stones	Vegetation
17676244	TP3B-D2-V	3.00 - 3.00	Dark Brown	Loamy Sand	Stones	Vegetation
17676294	TP3B-D3-V	2.40 - 2.40	Black	Silt Loam	Vegetation	None
17676203	TP3B-E1	0.50 - 0.50	Black	Loamy Sand	Crushed Brick	Stones
17676254	TP3B-E1	1.00 - 1.00	Black	Loamy Sand	Stones	Vegetation
17676314	TP3B-E1	2.00 - 2.00	Dark Brown	Stone/Soil	Stones	None
17676207	TP3B-E2	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
17676211	TP3B-E2	2.00 - 2.00	Dark Brown	Sand	Stones	Vegetation
17676215	TP3B-E2	2.90 - 2.90	Dark Brown	Loamy Sand	Stones	Vegetation
17676406	TP3B-E2	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17676249	TP3B-E3	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
17676258	TP3B-E3	1.00 - 1.00	Dark Brown	Sand	Stones	None
17676263	TP3B-E3	2.00 - 2.00	Dark Brown	Stone/Soil	Stones	None

			Colour	Description	Inclusions	Inclusions 2
17676370	TP3B-E1-V	2.20 - 2.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
17676219	TP3B-E2-V	3.00 - 3.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
17676267	TP3B-E3-V	2.30 - 2.30	Dark Brown	Sandy Clay Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C2	TP3B-C2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676298	17676302	17676309	17676319	17676328	17676332
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		4.7	0	4.8	12	6.9	6.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.02 M	0.0105 M	<0.01 M	0.0107 M	0.0107 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0107 M	0.0107 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.182		0.32		0.229	
Sulphate, Total potential	<0.06 %	TM132		0.546		0.96		0.687	
Soil Organic Matter (SOM)	<0.35 %	TM132		2.69 #	3.31 #	1.57 #	5.02 #	5.36 #	9.09 #
pH	1 pH Units	TM133		9.88 M	12.7 M	12.8 M	10.9 M	12.6 M	12.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	1.36 M	5.84 M	<1 M
Arsenic	<0.6 mg/kg	TM181		15.5 M	<6 M	43.7 M	7.2 M	2.07 M	2.25 M
Cadmium	<0.02 mg/kg	TM181		1.11 M	0.907 M	1.18 M	0.407 M	0.471 M	0.716 M
Chromium	<0.9 mg/kg	TM181		<0.9 M	401 M	279 M	132 M	374 M	337 M
Copper	<1.4 mg/kg	TM181		17.5 M	<14 M	85.9 M	26.8 M	6.22 M	8.84 M
Iron	<1000 mg/kg	TM181		233000 #	169000 #	134000 #	58000 #	139000 #	137000 #
Lead	<0.7 mg/kg	TM181		36.4 M	29.3 M	58 M	20.2 M	17.7 M	6.8 M
Manganese	<0.13 mg/kg	TM181		7950 M	24800 M	43800 M	11200 M	24600 M	33500 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		19.1 M	13.2 M	11.7 M	10.7 M	4.11 M	1.9 M
Selenium	<1 mg/kg	TM181		2.32 #	11.3 #	13 #	5.39 #	7.54 #	12 #
Vanadium	<0.2 mg/kg	TM181		129 #	374 #	932 #	161 #	281 #	1940 #
Zinc	<1.9 mg/kg	TM181		121 M	237 M	139 M	48.4 M	69.7 M	16.2 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.304		0.593		0.441	
Calcium	<21 mg/kg	TM224		75300		193000		201000	
Magnesium	<8 mg/kg	TM224		13300		36900		35600	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.324 M		<0.004 M		<0.004 M	

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C2	TP3B-C2	TP3B-C3	TP3B-C3	TP3B-C3	TP3B-C3
			Depth (m)	2.00 - 2.00	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676342	17676346	17676355	17676360	17676366	17676376
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		16	28	7.1	7.2	4.5	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		70.3 M	<12 M	<12 M	<12 #	<12 #	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0119 M	0.476 M	<0.05 M	0.0108 #	<0.05 #	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.014 M	<0.05 M	<0.01 #	<0.05 #	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.075 M	<0.015 #	<0.075 #	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.49 M	<0.035 M	<0.035 #	<0.035 #	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.202		0.229		0.338	
Sulphate, Total potential	<0.06 %	TM132		0.606		0.687		1.01	
Soil Organic Matter (SOM)	<0.35 %	TM132		3.05 #	3.84 #	5.91 #	1.34 #	4.81 #	5.53 #
pH	1 pH Units	TM133		9.07 M	9.61 M	11.7 M	12.1 #	12.3 #	11 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	2.24 M	2.28 #	<1 #	<1 M
Arsenic	<0.6 mg/kg	TM181		9.71 M	8.56 M	9.35 M	<6 #	2.74 #	5.49 M
Cadmium	<0.02 mg/kg	TM181		0.474 M	0.566 M	1.21 M	0.674 #	0.631 #	0.359 M
Chromium	<0.9 mg/kg	TM181		15.7 M	26.4 M	335 M	409 #	293 #	79.1 M
Copper	<1.4 mg/kg	TM181		13.6 M	14.2 M	20 M	<14 #	11.9 #	11 M
Iron	<1000 mg/kg	TM181		83800 #	89500 #	211000 #	151000 #	130000 #	64000 #
Lead	<0.7 mg/kg	TM181		21.4 M	22.2 M	42.9 M	14.7 #	9.53 #	14.2 M
Manganese	<0.13 mg/kg	TM181		2970 M	3240 M	20000 M	40900 #	33300 #	9590 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<1.4 #	<0.14 #	<0.14 M
Nickel	<0.2 mg/kg	TM181		17.2 M	26.1 M	28.9 M	2.83 #	2.58 #	12.6 M
Selenium	<1 mg/kg	TM181		1.48 #	1.99 #	<10 #	18.2 #	10.6 #	5.11 #
Vanadium	<0.2 mg/kg	TM181		97.8 #	124 #	647 #	2010 #	1580 #	341 #
Zinc	<1.9 mg/kg	TM181		72.2 M	92.4 M	134 M	28 #	28.6 #	53.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.145		0.425		0.535	
Calcium	<21 mg/kg	TM224		53700		172000		217000	
Magnesium	<8 mg/kg	TM224		7050		19200		15800	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0742 M		0.077 M		0.0229 #	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						No #	
Analysts Comments		TM304						0	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1-V	TP3B-C2-V	TP3B-C3-V	TP3B-D1	TP3B-D1	TP3B-D1
			Depth (m)	4.10 - 4.10	3.80 - 3.80	3.30 - 3.30	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676324	17676350	17676380	17676384	17676388	17676398
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		23	33	35	9.1	7.1	2.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		239 M	279 M	216 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0646 M	0.0204 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.226 M	0.0511 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.162 M	0.0307 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.452 M	0.102 M
Sulphur, Total	<0.02 %	TM132						0.276	
Sulphate, Total potential	<0.06 %	TM132						0.828	
Soil Organic Matter (SOM)	<0.35 %	TM132		5.14 #	5.19 #	6.48 #	1.33 #	13.4 #	12.6 #
pH	1 pH Units	TM133		7.48 M	7.2 M	7.33 M	12.2 M	11.9 M	11.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	2.47 M	<1 M	1.23 M
Arsenic	<0.6 mg/kg	TM181		12.7 M	12.2 M	12.8 M	<6 M	11.6 M	7.99 M
Cadmium	<0.02 mg/kg	TM181		0.407 M	0.288 M	0.664 M	0.802 M	2.06 M	0.895 M
Chromium	<0.9 mg/kg	TM181		33 M	34.3 M	31.8 M	455 M	41.9 M	151 M
Copper	<1.4 mg/kg	TM181		16.2 M	15.3 M	16.1 M	<14 M	16.9 M	8.88 M
Iron	<1000 mg/kg	TM181		20700 #	30600 #	32700 #	165000 #	292000 #	173000 #
Lead	<0.7 mg/kg	TM181		35.6 M	29.5 M	46.3 M	12 M	23.5 M	11.9 M
Manganese	<0.13 mg/kg	TM181		196 M	200 M	481 M	31500 M	12200 M	21400 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		23.6 M	25.4 M	28.1 M	9.25 M	54.7 M	13 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	14.1 #	<10 #	6.96 #
Vanadium	<0.2 mg/kg	TM181		54.5 #	57 #	65.4 #	432 #	688 #	885 #
Zinc	<1.9 mg/kg	TM181		124 M	118 M	172 M	58.5 M	74.9 M	53 M
Sulphate, acid soluble (total)	<0.02 %	TM221						0.495	
Calcium	<21 mg/kg	TM224						82600	
Magnesium	<8 mg/kg	TM224						5730	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243						0.041 M	

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D3	TP3B-D3
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	2.80 - 2.80	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676223	17676231	17676235	17676239	17676272	17676278
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.5	5.6	8.3	21	32	7.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	82 M	23 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.05 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	0.0217 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.05 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	0.0326 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.075 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M	0.0326 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M	0.0868 M
Sulphur, Total	<0.02 %	TM132		0.276		0.222			0.439
Sulphate, Total potential	<0.06 %	TM132		0.828		0.666			1.32
Soil Organic Matter (SOM)	<0.35 %	TM132		11.5 #	7.15 #	2.83 #	6.69 #	20 #	29 #
pH	1 pH Units	TM133		12.1 M	11.9 M	11.9 #	8.25 M	7.9 M	11.5 M
Cyanide, Total	<1 mg/kg	TM153		2.57 M	1.28 M	1.34 #	11.6 M	89.9 M	2.59 M
Arsenic	<0.6 mg/kg	TM181		<6 M	3.14 M	<6 #	12.6 M	34.1 M	7.87 M
Cadmium	<0.02 mg/kg	TM181		0.738 M	0.689 M	0.615 #	4.11 M	17.3 M	1.08 M
Chromium	<0.9 mg/kg	TM181		480 M	243 M	401 #	121 M	<0.9 M	210 M
Copper	<1.4 mg/kg	TM181		<14 M	9.6 M	<14 #	21.7 M	49.9 M	17.7 M
Iron	<1000 mg/kg	TM181		131000 #	121000 #	123000 #	100000 #	243000 #	139000 #
Lead	<0.7 mg/kg	TM181		20.5 M	38.4 M	13 #	736 M	4220 M	64.8 M
Manganese	<0.13 mg/kg	TM181		23000 M	25400 M	42100 #	6120 M	7520 M	24400 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 #	<0.14 M	1.24 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		8.06 M	5.21 M	4.18 #	20.1 M	23.7 M	18.7 M
Selenium	<1 mg/kg	TM181		11.7 #	9.1 #	18.3 #	3.88 #	5.07 #	10.6 #
Vanadium	<0.2 mg/kg	TM181		499 #	339 #	2880 #	124 #	69.4 #	1600 #
Zinc	<1.9 mg/kg	TM181		78.4 M	136 M	<19 #	1530 M	11900 M	121 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.647		0.587			1.06
Calcium	<21 mg/kg	TM224		183000		259000			150000
Magnesium	<8 mg/kg	TM224		40600		10900			16600
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0287 M		0.0389 #			0.151 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							N/A
Asbestos Quantification - Total - %	<0.001 %	TM304							<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	TP3B-D3	TP3B-D1-V	TP3B-D2-V	TP3B-D3-V	TP3B-E1	TP3B-E1
Depth (m)	2.00 - 2.00	2.60 - 2.60	3.00 - 3.00	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
Lab Sample No.(s)	17676285	17676402	17676244	17676294	17676203	17676254
AGS Reference						

Component	LOD/Units	Method											
Moisture Content Ratio (% of as received sample)	%	PM024	12		19		40		29		0.68		3.8	
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M	284	M	261	M	147	M	<12	M	<12	M
Phenol	<0.01 mg/kg	TM062 (S)	0.17	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M
Cresols	<0.01 mg/kg	TM062 (S)	0.283	M	<0.01	M	0.0167	M	<0.01	M	<0.01	M	<0.01	M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.15	M	<0.015	M	<0.015	M	<0.015	M	<0.015	M	<0.015	M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	0.452	M	<0.035	M	<0.035	M	<0.035	M	<0.035	M	<0.035	M
Sulphur, Total	<0.02 %	TM132									0.307			
Sulphate, Total potential	<0.06 %	TM132									0.921			
Soil Organic Matter (SOM)	<0.35 %	TM132	17.9	#	3.43	#	9.02	#	3.91	#	1.28	#	5.6	#
pH	1 pH Units	TM133	10.9	M	7.23	M	6.98	M	7.09	M	11.6	M	11.7	M
Cyanide, Total	<1 mg/kg	TM153	9.11	M	<1	M	<1	M	<1	M	<1	M	5.91	M
Arsenic	<0.6 mg/kg	TM181	6.56	M	11.4	M	15.7	M	9.69	M	3.78	M	2.77	M
Cadmium	<0.02 mg/kg	TM181	1.14	M	0.343	M	1.24	M	0.309	M	0.842	M	0.764	M
Chromium	<0.9 mg/kg	TM181	153	M	30.9	M	54.6	M	35.2	M	269	M	313	M
Copper	<1.4 mg/kg	TM181	<14	M	16.9	M	22.7	M	15	M	12.2	M	12.3	M
Iron	<1000 mg/kg	TM181	133000	#	29600	#	25500	#	29600	#	160000	#	136000	#
Lead	<0.7 mg/kg	TM181	41.8	M	28.7	M	66.7	M	36.7	M	17	M	17.7	M
Manganese	<0.13 mg/kg	TM181	17300	M	282	M	1220	M	239	M	36400	M	37600	M
Mercury	<0.14 mg/kg	TM181	<1.4	M	<0.14	M	<0.14	M	<0.14	M	<0.14	M	<0.14	M
Nickel	<0.2 mg/kg	TM181	13.3	M	25.7	M	26.7	M	26.2	M	162	M	5.45	M
Selenium	<1 mg/kg	TM181	<10	#	<1	#	1.79	#	<1	#	11.1	#	12	#
Vanadium	<0.2 mg/kg	TM181	1060	#	50.7	#	98.5	#	55.5	#	2180	#	1550	#
Zinc	<1.9 mg/kg	TM181	104	M	137	M	209	M	132	M	46.4	M	53.6	M
Sulphate, acid soluble (total)	<0.02 %	TM221									0.497			
Calcium	<21 mg/kg	TM224									208000			
Magnesium	<8 mg/kg	TM224									14900			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243									0.0948	M		

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E1	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E3
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676314	17676406	17676207	17676211	17676215	17676249
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.9	10	11	12	16	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.05 #	0.0224 M	0.0112 M	0.339 M	0.024 M	0.0336 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.05 #	0.0448 M	0.056 M	0.0113 M	0.204 M	0.0672 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.075 #	<0.015 M	<0.015 M	<0.015 M	0.024 M	0.0784 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	0.0672 M	0.0672 M	0.35 M	0.252 M	0.179 M
Sulphur, Total	<0.02 %	TM132		0.403	0.279		0.356		0.289
Sulphate, Total potential	<0.06 %	TM132		1.21	0.837		1.07		0.867
Soil Organic Matter (SOM)	<0.35 %	TM132		2.6 #	26.7 #	29.7 #	58.1 #	47.8 #	52.2 #
pH	1 pH Units	TM133		10.7 #	11.9 M	11.6 M	9.82 M	10.1 M	10.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 #	2.29 M	2.9 M	3.06 M	7.4 M	5.44 M
Arsenic	<0.6 mg/kg	TM181		<6 #	3.34 M	<6 M	<6 M	5.44 M	9.36 M
Cadmium	<0.02 mg/kg	TM181		0.846 #	<0.02 M	0.809 M	0.895 M	0.421 M	0.727 M
Chromium	<0.9 mg/kg	TM181		399 #	60.9 M	245 M	373 M	161 M	35.9 M
Copper	<1.4 mg/kg	TM181		14.7 #	4.28 M	24.5 M	<14 M	15.3 M	31.1 M
Iron	<1000 mg/kg	TM181		149000 #	86300 #	105000 #	161000 #	80500 #	63400 #
Lead	<0.7 mg/kg	TM181		31.7 #	8.62 M	21.4 M	19.6 M	27.7 M	66 M
Manganese	<0.13 mg/kg	TM181		44100 #	9240 M	18700 M	29000 M	12900 M	3660 M
Mercury	<0.14 mg/kg	TM181		<1.4 #	<0.14 M	<1.4 M	<1.4 M	0.569 M	1.58 M
Nickel	<0.2 mg/kg	TM181		6.36 #	7.45 M	11.8 M	5.25 M	12.7 M	19 M
Selenium	<1 mg/kg	TM181		19.8 #	3.44 #	<10 #	12.1 #	5.1 #	1.93 #
Vanadium	<0.2 mg/kg	TM181		2410 #	254 #	779 #	449 #	311 #	86.8 #
Zinc	<1.9 mg/kg	TM181		52.5 #	46.9 M	62.6 M	69.6 M	106 M	230 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.567	0.758		0.303		0.359
Calcium	<21 mg/kg	TM224		233000	138000		196000		76600
Magnesium	<8 mg/kg	TM224		12100	26600		28500		8790
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0496 #	0.117 M		0.0959 M		0.154 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			No #				
Analysts Comments		TM304			0				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E3	TP3B-E3	TP3B-E1-V	TP3B-E2-V	TP3B-E3-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	2.20 - 2.20	3.00 - 3.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676258	17676263	17676370	17676219	17676267
			AGS Reference					
Moisture Content Ratio (% of as received sample)	%	PM024		6.8	9.5	27	6.2	26
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	317 M	135 M	178 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.1 M	0.011 #	<0.05 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.1 M	0.033 #	<0.05 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.15 M	0.033 #	<0.075 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.077 #	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.269			
Sulphate, Total potential	<0.06 %	TM132			0.807			
Soil Organic Matter (SOM)	<0.35 %	TM132		17.4 #	10.5 #	4.79 #	2.47 #	2.71 #
pH	1 pH Units	TM133		11.2 M	11.7 #	7.32 M	7.49 M	7.46 M
Cyanide, Total	<1 mg/kg	TM153		4.18 M	5.55 #	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		2.58 M	<6 #	12.1 M	11.6 M	10.3 M
Cadmium	<0.02 mg/kg	TM181		0.416 M	1.32 #	0.261 M	0.17 M	0.246 M
Chromium	<0.9 mg/kg	TM181		178 M	222 #	28.4 M	32.2 M	37.4 M
Copper	<1.4 mg/kg	TM181		11.1 M	20.4 #	20.8 M	19.6 M	15.4 M
Iron	<1000 mg/kg	TM181		69000 #	140000 #	31000 #	28200 #	29700 #
Lead	<0.7 mg/kg	TM181		9.68 M	55.5 #	28.2 M	25.8 M	26.6 M
Manganese	<0.13 mg/kg	TM181		25700 M	26900 #	461 M	448 M	280 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 #	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		7.81 M	12.7 #	25.9 M	27.2 M	30.1 M
Selenium	<1 mg/kg	TM181		10.8 #	<10 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		1890 #	1400 #	49.2 #	52.7 #	60 #
Zinc	<1.9 mg/kg	TM181		42.7 M	118 #	129 M	119 M	126 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.448			
Calcium	<21 mg/kg	TM224			186000			
Magnesium	<8 mg/kg	TM224			12900			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0857 #			

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C2	TP3B-C2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676298	17676302	17676309	17676319	17676328	17676332
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.1	84.7	93.4	93.1	91	88.4
Acenaphthene-d10 % recovery**	%	TM218		89.2	90.6	93.3	86.2	91	91.1
Phenanthrene-d10 % recovery**	%	TM218		88.8	86.4	91.5	84.8	89.5	88.9
Chrysene-d12 % recovery**	%	TM218		85	84.7	89.7	89	91.8	86.3
Perylene-d12 % recovery**	%	TM218		82.1	83.4	100	101	99.7	81.9
Naphthalene	<0.009 mg/kg	TM218		0.162 M	12.7 M	1.27 M	2.81 M	7.48 M	26 M
Acenaphthylene	<0.012 mg/kg	TM218		0.181 M	5.14 M	0.0456 M	0.275 M	3.18 M	2.71 M
Acenaphthene	<0.008 mg/kg	TM218		0.0229 M	0.609 M	0.172 M	0.0694 M	0.254 M	0.244 M
Fluorene	<0.01 mg/kg	TM218		0.0683 M	3.17 M	0.0368 M	0.155 M	2.94 M	1.76 M
Phenanthrene	<0.015 mg/kg	TM218		0.58 M	37.4 M	6.53 M	1.28 M	15.8 M	15.4 M
Anthracene	<0.016 mg/kg	TM218		0.245 M	10.9 M	0.745 M	0.506 M	3.51 M	4.16 M
Fluoranthene	<0.017 mg/kg	TM218		2.13 M	56.9 M	11.3 M	2.36 M	18.2 M	16.2 M
Pyrene	<0.015 mg/kg	TM218		1.66 M	38.4 M	9.96 M	1.82 M	14.3 M	11.2 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.992 M	18.5 M	4.79 M	1.03 M	7.67 M	5.61 M
Chrysene	<0.01 mg/kg	TM218		0.945 M	15.2 M	6.64 M	1.08 M	6.63 M	4.52 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.34 M	19.4 M	4.02 M	1.45 M	11 M	6.1 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.446 M	7.81 M	5.28 M	0.534 M	4.34 M	2.54 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.89 M	13.5 M	4.09 M	1.08 M	8.74 M	4.81 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.677 M	10.5 M	3.98 M	1.03 M	7.18 M	3.25 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.171 M	2.29 M	0.929 M	0.235 M	1.71 M	0.771 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.647 M	9.45 M	4.35 M	0.907 M	6.94 M	3.2 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		11.2	262	64.2	16.6	120	109

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C2	TP3B-C2	TP3B-C3	TP3B-C3	TP3B-C3	TP3B-C3
			Depth (m)	2.00 - 2.00	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676342	17676346	17676355	17676360	17676366	17676376
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93	90.2	87.2	85.7	87.8	91.5
Acenaphthene-d10 % recovery**	%	TM218		90.6	95	88.9	87.3	81.2	90.7
Phenanthrene-d10 % recovery**	%	TM218		87.3	98	88.7	89.4	89.2	87.3
Chrysene-d12 % recovery**	%	TM218		84.8	102	85.1	85.2	87.6	82.4
Perylene-d12 % recovery**	%	TM218		92.9	89.5	90	90.2	92.1	77.7
Naphthalene	<0.009 mg/kg	TM218		0.119 M	1.01 M	1.69 M	1.14 #	4.13 #	1.46 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0149 M	0.138 M	0.763 M	0.35 #	1.01 #	0.0623 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0559 M	0.0715 M	0.134 #	0.112 #	0.46 M
Fluorene	<0.01 mg/kg	TM218		0.0196 M	0.259 M	0.347 M	0.198 #	0.377 #	0.469 M
Phenanthrene	<0.015 mg/kg	TM218		0.11 M	2.44 M	2.58 M	1.75 #	5.34 #	4.76 M
Anthracene	<0.016 mg/kg	TM218		0.024 M	1.13 M	0.729 M	0.604 #	1.46 #	1.01 M
Fluoranthene	<0.017 mg/kg	TM218		0.126 M	5.42 M	5.18 M	6.36 #	8.46 #	6.52 M
Pyrene	<0.015 mg/kg	TM218		0.0958 M	4.06 M	4.2 M	5.05 #	6.09 #	5.21 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0561 M	1.65 M	2.21 M	2.22 #	3.07 #	2.44 M
Chrysene	<0.01 mg/kg	TM218		0.0595 M	1.55 M	1.96 M	1.86 #	2.81 #	2.4 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0796 M	1.74 M	3.43 M	3.04 #	4.23 #	2.7 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0253 M	0.673 M	1 M	1.08 #	1.5 #	1.3 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0504 M	1.2 M	2.12 M	2 #	2.8 #	2.3 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0444 M	0.771 M	1.96 M	1.64 #	2.26 #	1.4 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.155 M	0.397 M	0.329 #	0.459 #	0.28 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.042 M	0.672 M	1.69 M	1.48 #	2.07 #	1.42 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.867	22.9	30.3	29.2	46.2	34.2

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1-V	TP3B-C2-V	TP3B-C3-V	TP3B-D1	TP3B-D1	TP3B-D1
			Depth (m)	4.10 - 4.10	3.80 - 3.80	3.30 - 3.30	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676324	17676350	17676380	17676384	17676388	17676398
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.6	86.5	87.2	84.2	85.5	90.9
Acenaphthene-d10 % recovery**	%	TM218		88.2	83.6	82	85.2	85.8	85
Phenanthrene-d10 % recovery**	%	TM218		85.4	91.4	87.6	86.3	85.1	88.4
Chrysene-d12 % recovery**	%	TM218		81.1	82.4	80.1	83.9	78.5	87.5
Perylene-d12 % recovery**	%	TM218		95	79.7	75.7	86.1	78.5	79.6
Naphthalene	<0.009 mg/kg	TM218		0.0287 M	0.0269 M	0.0207 M	2.14 M	2.33 M	9.27 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	1.35 M	1.04 M	4.24 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	0.0866 M	0.207 M	0.647 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	1.11 M	0.878 M	3.56 M
Phenanthrene	<0.015 mg/kg	TM218		0.0367 M	0.0288 M	0.0374 M	6.39 M	5.73 M	15.9 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	<0.016 M	1.87 M	1.8 M	5.06 M
Fluoranthene	<0.017 mg/kg	TM218		0.0494 M	0.0394 M	0.053 M	10.7 M	8 M	17.5 M
Pyrene	<0.015 mg/kg	TM218		0.039 M	0.0278 M	0.0423 M	7.45 M	6.16 M	13.1 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0215 M	<0.014 M	0.0238 M	3.88 M	2.9 M	5.83 M
Chrysene	<0.01 mg/kg	TM218		0.0226 M	0.0174 M	0.0328 M	3.31 M	2.52 M	4.57 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0366 M	<0.015 M	0.037 M	4.73 M	3.45 M	2.48 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	<0.014 M	1.66 M	1.2 M	2.25 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0228 M	<0.015 M	<0.015 M	3.34 M	2.31 M	4.08 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	<0.018 M	2.68 M	1.8 M	3 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	0.546 M	0.372 M	0.534 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	<0.024 M	2.33 M	1.6 M	2.74 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.257	0.14	0.247	53.5	42.3	94.7

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D3	TP3B-D3
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	2.80 - 2.80	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676223	17676231	17676235	17676239	17676272	17676278
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.2	89.3	85.9	86.6	91.4	88.9
Acenaphthene-d10 % recovery**	%	TM218		89.6	92.2	97.1	89.7	90.6	88.8
Phenanthrene-d10 % recovery**	%	TM218		91.5	89.6	87.8	88.5	93.4	85.4
Chrysene-d12 % recovery**	%	TM218		87.1	85.4	79.6	78.8	81.6	91.6
Perylene-d12 % recovery**	%	TM218		84.4	92.9	76.7	72.9	66.8	99.1
Naphthalene	<0.009 mg/kg	TM218		11.9 M	5.74 M	3.95 #	0.55 M	1.63 M	29.6 M
Acenaphthylene	<0.012 mg/kg	TM218		9.77 M	1.84 M	3.53 #	0.128 M	0.0795 M	17 M
Acenaphthene	<0.008 mg/kg	TM218		0.446 M	0.127 M	0.274 #	0.018 M	0.153 M	1.95 M
Fluorene	<0.01 mg/kg	TM218		7.72 M	0.838 M	2.69 #	0.113 M	0.237 M	14.6 M
Phenanthrene	<0.015 mg/kg	TM218		45.2 M	8.4 M	10.8 #	0.823 M	0.567 M	51.9 M
Anthracene	<0.016 mg/kg	TM218		11.8 M	2.16 M	2.97 #	0.18 M	0.172 M	19.9 M
Fluoranthene	<0.017 mg/kg	TM218		42.6 M	12 M	15.4 #	0.905 M	0.556 M	78.9 M
Pyrene	<0.015 mg/kg	TM218		30.7 M	9.1 M	11.1 #	0.682 M	0.717 M	53.7 M
Benz(a)anthracene	<0.014 mg/kg	TM218		14.1 M	4.68 M	3.96 #	0.259 M	0.187 M	31.9 M
Chrysene	<0.01 mg/kg	TM218		11.8 M	3.72 M	3.74 #	0.276 M	0.175 M	27.9 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		16.3 M	6.47 M	4.35 #	0.306 M	0.258 M	47.8 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		6.25 M	1.96 M	1.68 #	0.107 M	0.0838 M	15.1 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		10.6 M	4.16 M	2.98 #	0.193 M	0.115 M	31.9 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		8.32 M	3.73 M	2.06 #	0.138 M	0.0935 M	24.6 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		1.86 M	0.795 M	0.479 #	0.0353 M	<0.023 M	5.6 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		7.32 M	3.28 M	2.05 #	0.132 M	0.103 M	22.3 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		237	69	72.1	4.85	5.12	475

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-D3	TP3B-D1-V	TP3B-D2-V	TP3B-D3-V	TP3B-E1	TP3B-E1
			Depth (m)	2.00 - 2.00	2.60 - 2.60	3.00 - 3.00	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676285	17676402	17676244	17676294	17676203	17676254
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.7	86.2	90	90.3	90	89
Acenaphthene-d10 % recovery**	%	TM218		99.3	83.3	83.9	91.2	83.9	86.6
Phenanthrene-d10 % recovery**	%	TM218		85	90.5	87.8	91.3	87.9	93.5
Chrysene-d12 % recovery**	%	TM218		79.2	83.1	81.2	80.2	85.7	85.1
Perylene-d12 % recovery**	%	TM218		87.1	84.7	79.4	80	84.7	86
Naphthalene	<0.009 mg/kg	TM218		380 M	0.029 M	0.0509 M	5.92 M	0.162 M	39.9 M
Acenaphthylene	<0.012 mg/kg	TM218		204 M	<0.012 M	0.0207 M	0.342 M	0.0168 M	9.61 M
Acenaphthene	<0.008 mg/kg	TM218		13 M	0.0259 M	<0.008 M	0.619 M	0.144 M	1.67 M
Fluorene	<0.01 mg/kg	TM218		166 M	0.019 M	0.0257 M	0.93 M	0.0687 M	4.32 M
Phenanthrene	<0.015 mg/kg	TM218		485 M	0.0871 M	0.164 M	1.49 M	0.953 M	37.6 M
Anthracene	<0.016 mg/kg	TM218		167 M	<0.016 M	0.0301 M	0.169 M	0.23 M	10.3 M
Fluoranthene	<0.017 mg/kg	TM218		400 M	0.112 M	0.233 M	0.204 M	2.35 M	57.6 M
Pyrene	<0.015 mg/kg	TM218		269 M	0.0813 M	0.164 M	0.147 M	2.37 M	49.4 M
Benz(a)anthracene	<0.014 mg/kg	TM218		134 M	0.0445 M	0.0809 M	0.0271 M	1.5 M	27.2 M
Chrysene	<0.01 mg/kg	TM218		112 M	0.0405 M	0.0809 M	0.0267 M	1.67 M	27.4 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		161 M	0.0458 M	0.135 M	0.0322 M	2.39 M	41.1 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		52.8 M	<0.014 M	0.0409 M	<0.014 M	0.96 M	13.9 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		106 M	0.0285 M	0.0728 M	<0.015 M	1.8 M	27.1 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		78.3 M	<0.018 M	0.0647 M	<0.018 M	1.44 M	21.5 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		17.8 M	<0.023 M	<0.023 M	<0.023 M	0.227 M	4.63 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		69.4 M	<0.024 M	0.0619 M	<0.024 M	1.33 M	18.6 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2820	0.514	1.23	9.9	17.6	392

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E1	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E3
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676314	17676406	17676207	17676211	17676215	17676249
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.2	90.1	87.1	90.1	86.9	90.5
Acenaphthene-d10 % recovery**	%	TM218		84.6	89.5	87.8	89.4	89.5	90.7
Phenanthrene-d10 % recovery**	%	TM218		86.7	85.6	80.1	82	85.9	84.2
Chrysene-d12 % recovery**	%	TM218		87.6	81.3	77.9	82.7	86.4	82.3
Perylene-d12 % recovery**	%	TM218		92.3	76.1	100	92.4	85.9	89.9
Naphthalene	<0.009 mg/kg	TM218		0.929 #	22 M	23.3 M	17.7 M	34.1 M	40.6 M
Acenaphthylene	<0.012 mg/kg	TM218		1.36 #	4.98 M	15.6 M	10.6 M	16 M	17.9 M
Acenaphthene	<0.008 mg/kg	TM218		0.13 #	0.34 M	1.38 M	0.313 M	0.906 M	1.87 M
Fluorene	<0.01 mg/kg	TM218		0.703 #	2.73 M	13.5 M	3.44 M	8.64 M	22.7 M
Phenanthrene	<0.015 mg/kg	TM218		6.92 #	18.6 M	79.1 M	29.1 M	56.6 M	93.1 M
Anthracene	<0.016 mg/kg	TM218		2.2 #	5.13 M	25.2 M	10.9 M	15.7 M	18.2 M
Fluoranthene	<0.017 mg/kg	TM218		14.6 #	29.8 M	129 M	79.4 M	103 M	109 M
Pyrene	<0.015 mg/kg	TM218		10.7 #	21.4 M	94.3 M	58.1 M	74.4 M	75.4 M
Benz(a)anthracene	<0.014 mg/kg	TM218		5.41 #	11.5 M	48.7 M	34.1 M	43.4 M	38.4 M
Chrysene	<0.01 mg/kg	TM218		4.64 #	9.31 M	40.1 M	29.8 M	36.3 M	28.6 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		7.22 #	13.4 M	52.7 M	47.6 M	61.1 M	52.5 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.51 #	5.73 M	24.2 M	15.2 M	17.3 M	17.4 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		4.95 #	10.1 M	42 M	32 M	40.9 M	35.7 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		3.86 #	7.71 M	29.9 M	27.5 M	34.6 M	29.2 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.799 #	1.66 M	7.36 M	6.27 M	7.29 M	6.23 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		3.38 #	6.7 M	27.1 M	24.4 M	31.3 M	26.3 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		70.3	171	654	426	582	614

Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E3	TP3B-E3	TP3B-E1-V	TP3B-E2-V	TP3B-E3-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	2.20 - 2.20	3.00 - 3.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676258	17676263	17676370	17676219	17676267
			AGS Reference					
Naphthalene-d8 % recovery**	%	TM218		76.3	98.7	80.7	82	90.6
Acenaphthene-d10 % recovery**	%	TM218		87.8	106	83	84.5	87.3
Phenanthrene-d10 % recovery**	%	TM218		86	96.4	85.6	86.9	84.7
Chrysene-d12 % recovery**	%	TM218		82.2	87.9	83.9	81.8	81.4
Perylene-d12 % recovery**	%	TM218		70.6	86.4	89.2	80.3	89.7
Naphthalene	<0.009 mg/kg	TM218		110 M	26.1 #	0.0578 M	0.0682 M	0.0125 M
Acenaphthylene	<0.012 mg/kg	TM218		39.3 M	8.53 #	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		3.27 M	0.84 #	<0.008 M	0.0573 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		39.2 M	9.2 #	<0.01 M	0.0455 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		142 M	34.8 #	0.0511 M	0.204 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		27 M	8.1 #	<0.016 M	0.0417 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		135 M	47.7 #	0.0905 M	0.192 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		90.4 M	36.8 #	0.069 M	0.157 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		40.7 M	14.5 #	0.0394 M	0.0915 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		31.4 M	12 #	0.0341 M	0.0918 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		46.3 M	16.7 #	0.057 M	0.108 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		16.4 M	6.06 #	<0.014 M	0.0425 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		32.3 M	11.6 #	0.0354 M	0.0728 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		21.4 M	7.98 #	0.0279 M	0.0435 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		4.59 M	1.7 #	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		20.6 M	7.71 #	<0.024 M	0.0488 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		800	250	0.462	1.26	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C2	TP3B-C2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676298	17676302	17676309	17676319	17676328	17676332
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		94	91	72	89	62	55
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	0.233	0.544	0.874	<0.176	2.41
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.108	<0.04	0.0944
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	0.101	0.123	<0.04	0.124
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.089	0.193	0.311	<0.04	1.19
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	1.37	37.1	9.24	4.69	3.52
Aliphatics >C16-C21	<0.1 mg/kg	TM173		6.74	5.87	166	52.5	57.6	7.54
Aliphatics >C21-C35	<0.1 mg/kg	TM173		50.6	53.3	1610	263	111	25.2
Aliphatics >C35-C44	<0.1 mg/kg	TM173		20.4	6.68	482	73.1	16.1	3.06
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		77.7	67.2	2290	398	190	39.3
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	0.0746	0.0889	<0.04	0.12
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.06	0.129	0.207	<0.04	0.791
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	11	9.83	3.91	17.4	12.7
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		6.45	51.3	59.5	29.2	80.4	61
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		38.8	106	400	114	234	93.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		20.5	28	180	38.6	59.9	26
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.63	10.4	57.8	12	17.6	8.33
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		65.8	196	649	185	392	193
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		144	264	2940	584	582	234

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C2	TP3B-C2	TP3B-C3	TP3B-C3	TP3B-C3	TP3B-C3
			Depth (m)	2.00 - 2.00	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676342	17676346	17676355	17676360	17676366	17676376
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89	88	90	88	122	86
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	0.328	<0.176	<0.176	0.239	2.29
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0445
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	0.07	<0.04	<0.04	<0.04	0.184
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.0952	<0.04	<0.04	0.0828	1.12
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.12	9.61	9.33	21	7.07	24.9
Aliphatics >C16-C21	<0.1 mg/kg	TM173		17.8	28.5	226	581	182	69.8
Aliphatics >C21-C35	<0.1 mg/kg	TM173		156	213	128	212	74.7	180
Aliphatics >C35-C44	<0.1 mg/kg	TM173		64.3	29.9	23.7	14.7	5.41	55.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		244	281	387	828	270	331
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.0462	<0.04	<0.04	<0.04	0.144
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.063	<0.04	<0.04	0.0555	0.749
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.13	4.88	5.24	8.04	7.74	9.3
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		5.53	24.7	69	162	89	57
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		39.3	103	97.5	133	90	125
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		23.2	25.2	24.3	24.6	21.4	55.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		8.43	7.53	8.18	7.84	8.08	22.2
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		69.1	158	196	328	208	247
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		313	439	583	1160	478	580

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1-V	TP3B-C2-V	TP3B-C3-V	TP3B-D1	TP3B-D1	TP3B-D1
			Depth (m)	4.10 - 4.10	3.80 - 3.80	3.30 - 3.30	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676324	17676350	17676380	17676384	17676388	17676398
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89	105	102	79	38	48
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	0.231	2.21	1.29
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0808	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.274	0.118
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.258	0.113
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0814	0.654	0.463
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	29	9.53
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	3.76	39.3	22.3
Aliphatics >C21-C35	<0.1 mg/kg	TM173		4.02	3.33	6.74	24.1	151	89.6
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	3.37	85.5	55
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		4.02	3.33	6.74	31.2	305	177
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.116	0.0501
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.11	0.0685
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.28	0.139
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0539	0.435	0.309
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.905	<0.1	<0.1	3.59	27.8	34.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		2.74	<0.1	<0.1	17.6	115	129
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		58	29.9	17.8	36.9	289	239
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		10.4	3.41	3.47	8.4	141	90.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.5	<0.1	<0.1	2.45	57.4	35.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		72.1	33.3	21.2	66.5	572	493
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		76.1	36.6	28	97.8	880	671

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

TPH CWG (S)

Results Legend		Customer Sample Ref.	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D3	TP3B-D3
#	ISO17025 accredited.							
M	*m*CERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	2.80 - 2.80	0.30 - 0.30	1.00 - 1.00
		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
		Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
		Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
		Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
		SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
(F)	Trigger breach confirmed	Lab Sample No.(s)	17676223	17676231	17676235	17676239	17676272	17676278
1-5&+§@	Sample deviation (see appendix)	AGS Reference						

Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	65	34	79	65	84	30
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089	0.478	0.244	1.39	0.626	<0.176	0.343
Aliphatics >C5-C6	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	0.0686	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089	<0.04	0.0466	0.0949	0.147	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089	0.209	<0.04	0.708	0.0635	<0.04	0.089
Aliphatics >C12-C16	<0.1 mg/kg	TM173	28.3	36.6	117	4.05	5.21	16.3
Aliphatics >C16-C21	<0.1 mg/kg	TM173	511	647	1600	85.3	90	91.9
Aliphatics >C21-C35	<0.1 mg/kg	TM173	135	158	294	59.3	224	94.9
Aliphatics >C35-C44	<0.1 mg/kg	TM173	7.08	10.7	11.6	6.96	45.4	21.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173	681	852	2020	156	365	225
Aromatics >EC5-EC7	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	0.0838	0.0482	0.0477
Aromatics >EC7-EC8	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089	<0.04	0.053	0.0764	0.169	<0.04	0.0521
Aromatics >EC10-EC12	<0.01 mg/kg	TM089	0.139	<0.04	0.472	0.0419	<0.04	0.0597
Aromatics >EC12-EC16	<0.1 mg/kg	TM173	35.1	13.8	47.5	1.76	4.25	68.8
Aromatics >EC16-EC21	<0.1 mg/kg	TM173	245	211	447	28.7	59.7	354
Aromatics >EC21-EC35	<0.1 mg/kg	TM173	228	160	219	41.2	147	779
Aromatics >EC35-EC44	<0.1 mg/kg	TM173	47.8	32.6	35.1	6.61	33.8	191
Aromatics >EC40-EC44	<0.1 mg/kg	TM173	14.1	9.58	9.9	1.25	14.2	57.4
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173	556	417	748	78.3	245	1390
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173	1240	1270	2770	235	609	1620

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-D3	TP3B-D1-V	TP3B-D2-V	TP3B-D3-V	TP3B-E1	TP3B-E1
			Depth (m)	2.00 - 2.00	2.60 - 2.60	3.00 - 3.00	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676285	17676402	17676244	17676294	17676203	17676254
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		66	89	82	83	128	69
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		1.28	<0.176	<0.176	1.69	<0.176	1.39
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0452	<0.04	<0.04	0.0691	<0.04	0.0727
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0881	<0.04	<0.04	0.18	<0.04	0.117
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.588	<0.04	0.0451	0.574	<0.04	0.617
Aliphatics >C12-C16	<0.1 mg/kg	TM173		11.3	<0.1	<0.1	29.1	4.5	4.34
Aliphatics >C16-C21	<0.1 mg/kg	TM173		98.2	0.133	3.56	264	18.2	18.3
Aliphatics >C21-C35	<0.1 mg/kg	TM173		64	2.39	6.04	56	99.8	64.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		8.59	<0.1	<0.1	0.121	27.7	16.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		182	2.53	9.6	350	150	104
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0881	<0.04	<0.04	0.409	<0.04	0.104
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.392	<0.04	<0.04	0.382	<0.04	0.411
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		233	0.346	<0.1	16.1	1.2	10.5
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		671	1.69	2.53	111	14.8	49
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		1040	15.9	21.7	45.1	84.3	154
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		248	7.09	4.01	6.04	31	53.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		68.9	3.19	<0.1	2.06	10.4	19.6
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		2190	25	28.2	179	131	267
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		2380	27.6	37.9	530	282	372

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E1	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E3
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676314	17676406	17676207	17676211	17676215	17676249
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		104	10	20	8	14	14
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	0.519	0.323	<0.176	0.371	0.627
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	0.0571	0.0403	<0.04	0.0672	0.0784
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0516	0.0448
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.157	0.0874	<0.04	0.0912	0.212
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.83	12.4	11.9	11.4	15.8	10.5
Aliphatics >C16-C21	<0.1 mg/kg	TM173		11.2	75	138	64.7	167	71.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		63.4	266	92.2	65.3	113	106
Aliphatics >C35-C44	<0.1 mg/kg	TM173		19.3	61.2	22.4	10.8	12.7	13.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		96.7	414	264	152	308	201
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	0.0571	<0.04	<0.04	<0.04	0.0459
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.056	0.0459	<0.04	0.0564	0.0594
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.105	0.0582	<0.04	0.06	0.141
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.41	34.5	23.7	33.1	63.1	38.7
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		21.6	205	155	163	446	203
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		72.8	441	298	400	874	406
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		23.9	111	85.7	93.4	185	100
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.94	32.8	29.2	27	47.5	30.5
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		122	791	563	689	1570	748
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		218	1210	827	842	1880	950

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E3	TP3B-E3	TP3B-E1-V	TP3B-E2-V	TP3B-E3-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	2.20 - 2.20	3.00 - 3.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676258	17676263	17676370	17676219	17676267
			AGS Reference					
GRO Surrogate % recovery**	%	TM089		24	64	110	98	96
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		7.85	9.34	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0526	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.193	0.0803	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.35	0.241	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		3.88	5.17	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		14.9	123	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		57.6	2440	<0.1	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		114	856	8.89	0.37	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		14.8	44.9	0.345	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		201	3470	9.24	0.37	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.214	0.044	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.108	0.0429	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.472	0.296	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		2.59	3.45	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		489	160	0.58	0.332	0.477
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1900	1050	0.771	0.805	1.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		2530	881	60.5	10.7	23.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		504	175	11.5	4.17	6.74
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		158	58.4	3.77	1.73	2.82
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		5420	2260	73.3	16	32.6
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		5630	5740	82.5	16.4	32.6

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C2	TP3B-C2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676298	17676302	17676309	17676319	17676328	17676332
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	105	106	111	95.8	101
Toluene-d8**	%	TM116		99.8	99.2	94.7	98.6	95.7	98.9
4-Bromofluorobenzene**	%	TM116		103	87.7	95.8	96.9	87.7	91
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.745 M	0.283 M	4.17 M	0.537 M	14.2 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C2	TP3B-C2	TP3B-C3	TP3B-C3	TP3B-C3	TP3B-C3
			Depth (m)	2.00 - 2.00	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676342	17676346	17676355	17676360	17676366	17676376
			AGS Reference						
Dibromofluoromethane**	%	TM116		113	110	105	104	95.1	104
Toluene-d8**	%	TM116		98.9	98	95.1	97.4	95.9	97
4-Bromofluorobenzene**	%	TM116		98.4	93.8	88.5	89.6	84.4	86.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 #	<0.09 #	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 #	<0.07 #	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 #	<0.04 #	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.315 M	0.392 M	<0.13 #	1.38 #	0.305 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
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*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-C1-V	TP3B-C2-V	TP3B-C3-V	TP3B-D1	TP3B-D1	TP3B-D1
			Depth (m)	4.10 - 4.10	3.80 - 3.80	3.30 - 3.30	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676324	17676350	17676380	17676384	17676388	17676398
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	105	112	94.8	109	99.4
Toluene-d8**	%	TM116		97.6	97.9	97.9	96.9	98.8	90
4-Bromofluorobenzene**	%	TM116		98.9	87.4	88.6	83.8	96.2	74.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<2 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<1.8 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<1.4 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.8 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<2 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<2 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	1.34 M	<2.6 M	5.11 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<8	<0.4

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
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*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D2	TP3B-D3	TP3B-D3
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	2.80 - 2.80	0.30 - 0.30	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676223	17676231	17676235	17676239	17676272	17676278
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.7	101	109	103	98	94.3
Toluene-d8**	%	TM116		95.9	96	96.6	97.6	97.5	95.3
4-Bromofluorobenzene**	%	TM116		81	92.7	85.1	93.3	89.3	83.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 #	<0.2 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.18 M	<0.09 #	<0.18 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.14 M	<0.07 #	<0.14 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.08 M	<0.04 #	<0.08 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.2 #	<0.1 #	<0.2 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 #	<0.2 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		2.26 M	0.439 M	1.22 #	<0.26 M	0.219 M	3.22 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.8	<0.4	<0.8	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-D3	TP3B-D1-V	TP3B-D2-V	TP3B-D3-V	TP3B-E1	TP3B-E1
			Depth (m)	2.00 - 2.00	2.60 - 2.60	3.00 - 3.00	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676285	17676402	17676244	17676294	17676203	17676254
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	109	111	110	107	92.1
Toluene-d8**	%	TM116		98.8	96.8	98.6	98.2	96.4	90.9
4-Bromofluorobenzene**	%	TM116		95.2	88.9	89.7	94.2	87.9	73.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	0.0592 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		5.9 M	<0.13 M	<0.13 M	6.39 M	<0.13 M	1.77 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E1	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E3
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676314	17676406	17676207	17676211	17676215	17676249
			AGS Reference						
Dibromofluoromethane**	%	TM116		102	101	94.6	102	106	102
Toluene-d8**	%	TM116		95	98	94.4	98.1	98.9	96.6
4-Bromofluorobenzene**	%	TM116		86.1	101	82.7	87.5	101	93.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 #	<2 M	<0.2 M	<2 M	<2 M	<2 M
Benzene	<0.009 mg/kg	TM116		<0.09 #	<1.8 M	<0.18 M	<1.8 M	<1.8 M	<1.8 M
Toluene	<0.007 mg/kg	TM116		<0.07 #	<1.4 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 #	<0.8 M	<0.08 M	<0.8 M	<0.8 M	<0.8 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<2 #	<0.2 #	<2 #	<2 #	<2 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 #	<2 M	<0.2 M	<2 M	<2 M	<2 M
Naphthalene	<0.013 mg/kg	TM116		0.356 #	23.2 M	0.681 M	11.9 M	6.44 M	37.3 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<8	<0.8	<8	<8	<8

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP3B-E3	TP3B-E3	TP3B-E1-V	TP3B-E2-V	TP3B-E3-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	2.20 - 2.20	3.00 - 3.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/06/2018	01/06/2018	01/06/2018	01/06/2018	01/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	04/06/2018	04/06/2018	04/06/2018	04/06/2018	04/06/2018
			SDG Ref	180604-4	180604-4	180604-4	180604-4	180604-4
			Lab Sample No.(s)	17676258	17676263	17676370	17676219	17676267
			AGS Reference					
Dibromofluoromethane**	%	TM116		78.3	104	105	108	113
Toluene-d8**	%	TM116		90.7	94.1	96.9	100	98.3
4-Bromofluorobenzene**	%	TM116		73.4	79.8	84.6	103	99
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 #	<0.1 M	<2 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		0.172 M	<0.09 #	<0.09 M	<1.8 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		0.116 M	<0.07 #	<0.07 M	<1.4 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 #	<0.04 M	<0.8 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		0.183 #	<0.1 #	<0.1 #	<2 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 #	<0.1 M	<2 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		236 M	10.3 #	<0.13 M	<2.6 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		0.47	<0.4	<0.4	<8	<0.4

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-C1 0.50 - 0.50 SOLID 01/06/2018 00:00:00 05/06/2018 07:04:49 180604-4 17676298 TM048	08/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-C1 2.00 - 2.00 SOLID 01/06/2018 00:00:00 05/06/2018 06:59:33 180604-4 17676309 TM048	08/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-C2 0.30 - 0.30 SOLID 01/06/2018 00:00:00 05/06/2018 07:02:19 180604-4 17676328 TM048	08/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-C2 2.00 - 2.00 SOLID 01/06/2018 00:00:00 05/06/2018 07:07:45 180604-4 17676342 TM048	08/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-C3 0.50 - 0.50 SOLID 01/06/2018 00:00:00 05/06/2018 12:37:58 180604-4 17676355 TM048	11/06/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-C3 2.00 - 2.00 SOLID 01/06/2018 00:00:00 06/06/2018 07:22:27 180604-4 17676366 TM048	11/06/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-D1 1.00 - 1.00 SOLID 01/06/2018 00:00:00 05/06/2018 10:09:11 180604-4 17676388 TM048	11/06/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-D2 0.40 - 0.40 SOLID 01/06/2018 00:00:00 05/06/2018 12:40:39 180604-4 17676223 TM048	11/06/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-D2 2.00 - 2.00 SOLID 01/06/2018 00:00:00 05/06/2018 06:20:50 180604-4 17676235 TM048	06/06/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-D3 1.00 - 1.00 SOLID 01/06/2018 00:00:00 06/06/2018 07:25:33 180604-4 17676278 TM048	11/06/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-E1 0.50 - 0.50 SOLID 01/06/2018 00:00:00 05/06/2018 09:22:13 180604-4 17676203 TM048	08/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-E1 2.00 - 2.00 SOLID 01/06/2018 00:00:00 05/06/2018 10:11:57 180604-4 17676314 TM048	11/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Trace

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-E2 0.50 - 0.50 SOLID 01/06/2018 00:00:00 05/06/2018 06:46:42 180604-4 17676406 TM048	11/06/2018	James Richards	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-E2 2.00 - 2.00 SOLID 01/06/2018 00:00:00 05/06/2018 06:43:56 180604-4 17676211 TM048	11/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-E3 0.50 - 0.50 SOLID 01/06/2018 00:00:00 04/06/2018 19:06:20 180604-4 17676249 TM048	11/06/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-E3 2.00 - 2.00 SOLID 01/06/2018 00:00:00 05/06/2018 07:54:09 180604-4 17676263 TM048	11/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-C3 2.00 - 2.00 SOLID 01/06/2018 00:00:00 06/06/2018 07:22:01 180604-4 17676366 TM304	No (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-D3 1.00 - 1.00 SOLID 01/06/2018 00:00:00 06/06/2018 07:25:03 180604-4 17676278 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TP3B-E2 0.50 - 0.50 SOLID 01/06/2018 00:00:00 05/06/2018 06:46:16 180604-4 17676406 TM304	No (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0.685
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.3
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676203
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000259	<0.00001	0.000259	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00244	<0.001	0.0244	<0.01	-	-	-
Copper	0.00175	<0.0003	0.0175	<0.003	-	-	-
Lead	0.000601	<0.0002	0.00601	<0.002	-	-	-
Manganese	0.0433	<0.003	0.433	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0521	<0.001	0.521	<0.01	-	-	-
Zinc	0.00352	<0.001	0.0352	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.501	<0.019	5.01	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00196	<0.00001	0.0196	<0.0001	-	-	-
Acenaphthene by GCMS	0.000434	<0.000005	0.00434	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Fluoranthene by GCMS	0.0013	<0.000005	0.013	<0.00005	-	-	-
Anthracene by GCMS	0.000195	<0.000005	0.00195	<0.00005	-	-	-
Phenanthrene by GCMS	0.000948	<0.000005	0.00948	<0.00005	-	-	-
Fluorene by GCMS	0.000155	<0.000005	0.00155	<0.00005	-	-	-
Chrysene by GCMS	0.000179	<0.000005	0.00179	<0.00005	-	-	-
Pyrene by GCMS	0.00168	<0.000005	0.0168	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000477	<0.000005	0.000477	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000191	<0.000002	0.000191	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000621	<0.000005	0.0000621	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00719	<0.000082	0.0719	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.62
Conductivity (µS/cm)	1,110.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates
18/06/2018 16:26:12

16:25:27 18/06/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0.685
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.3
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676203
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.62
Conductivity (µS/cm)	1,110.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676207
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.21	<0.2	2.1	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000242	<0.00001	0.000242	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000594	<0.0005	0.00594	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00106	<0.001	0.0106	<0.01	-	-	-
Copper	0.00511	<0.0003	0.0511	<0.003	-	-	-
Lead	0.000519	<0.0002	0.00519	<0.002	-	-	-
Manganese	0.00863	<0.003	0.0863	<0.03	-	-	-
Nickel	0.000809	<0.0004	0.00809	<0.004	-	-	-
Selenium	0.0013	<0.001	0.013	<0.01	-	-	-
Vanadium	0.0818	<0.001	0.818	<0.01	-	-	-
Zinc	0.00693	<0.001	0.0693	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.243	<0.019	2.43	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000417	<0.00001	0.00417	<0.0001	-	-	-
Acenaphthene by GCMS	0.000038	<0.000005	0.00038	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000319	<0.000005	0.00319	<0.00005	-	-	-
Fluoranthene by GCMS	0.000465	<0.000005	0.00465	<0.00005	-	-	-
Anthracene by GCMS	0.0000773	<0.000005	0.000773	<0.00005	-	-	-
Phenanthrene by GCMS	0.000441	<0.000005	0.00441	<0.00005	-	-	-
Fluorene by GCMS	0.000142	<0.000005	0.00142	<0.00005	-	-	-
Chrysene by GCMS	0.0000367	<0.000005	0.000367	<0.00005	-	-	-
Pyrene by GCMS	0.000478	<0.000005	0.00478	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000267	<0.000005	0.000267	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000328	<0.000005	0.000328	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000215	<0.000002	0.000215	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000065	<0.000005	0.000065	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00002	<0.000005	0.0002	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00253	<0.000082	0.0253	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.33
Conductivity (µS/cm)	616.00
Temperature (°C)	21.30
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676207
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.33
Conductivity (µS/cm)	616.00
Temperature (°C)	21.30
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676211
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.067	<0.05	0.67	<0.5	-	-	-
Arsenic	0.00229	<0.0005	0.0229	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00309	<0.0003	0.0309	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000564	<0.0004	0.00564	<0.004	-	-	-
Selenium	0.00178	<0.001	0.0178	<0.01	-	-	-
Vanadium	0.202	<0.001	2.02	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.352	<0.019	3.52	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000558	<0.00001	0.00558	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000279	<0.000005	0.000279	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000153	<0.000005	0.00153	<0.00005	-	-	-
Fluoranthene by GCMS	0.000543	<0.000005	0.00543	<0.00005	-	-	-
Anthracene by GCMS	0.0000668	<0.000005	0.000668	<0.00005	-	-	-
Phenanthrene by GCMS	0.000234	<0.000005	0.00234	<0.00005	-	-	-
Fluorene by GCMS	0.0000623	<0.000005	0.000623	<0.00005	-	-	-
Chrysene by GCMS	0.000304	<0.000005	0.00304	<0.00005	-	-	-
Pyrene by GCMS	0.000442	<0.000005	0.00442	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000255	<0.000005	0.00255	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000532	<0.000005	0.00532	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00024	<0.000005	0.0024	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000347	<0.000002	0.00347	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000118	<0.000005	0.00118	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000372	<0.000005	0.00372	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000469	<0.000005	0.00469	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00472	<0.000082	0.0472	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.05
Conductivity (µS/cm)	153.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676211
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.05
Conductivity (µS/cm)	153.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676215
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	2.90 - 2.90

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.173	<0.05	1.73	<0.5	-	-	-
Arsenic	0.00317	<0.0005	0.0317	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00101	<0.001	0.0101	<0.01	-	-	-
Copper	0.00819	<0.0003	0.0819	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00136	<0.0004	0.0136	<0.004	-	-	-
Selenium	0.00225	<0.001	0.0225	<0.01	-	-	-
Vanadium	0.204	<0.001	2.04	<0.01	-	-	-
Zinc	0.00111	<0.001	0.0111	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.275	<0.019	2.75	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000243	<0.00001	0.00243	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000645	<0.000005	0.0000645	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000724	<0.000005	0.000724	<0.00005	-	-	-
Fluoranthene by GCMS	0.000217	<0.000005	0.00217	<0.00005	-	-	-
Anthracene by GCMS	0.0000414	<0.000005	0.000414	<0.00005	-	-	-
Phenanthrene by GCMS	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Fluorene by GCMS	0.000023	<0.000005	0.00023	<0.00005	-	-	-
Chrysene by GCMS	0.0000782	<0.000005	0.000782	<0.00005	-	-	-
Pyrene by GCMS	0.000186	<0.000005	0.00186	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000837	<0.000005	0.000837	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000454	<0.000005	0.000454	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000844	<0.000002	0.000844	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000226	<0.000005	0.000226	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00011	<0.000005	0.0011	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000696	<0.000005	0.000696	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00156	<0.000082	0.0156	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.54
Conductivity (µS/cm)	253.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676215
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	2.90 - 2.90

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.54
Conductivity (µS/cm)	253.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676223
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000113	<0.00001	0.000113	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000616	<0.0005	0.00616	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00721	<0.001	0.0721	<0.01	-	-	-
Copper	0.0063	<0.0003	0.063	<0.003	-	-	-
Lead	0.000263	<0.0002	0.00263	<0.002	-	-	-
Manganese	0.00362	<0.003	0.0362	<0.03	-	-	-
Nickel	0.000732	<0.0004	0.00732	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00535	<0.001	0.0535	<0.01	-	-	-
Zinc	0.00152	<0.001	0.0152	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00859	<0.00001	0.0859	<0.0001	-	-	-
Acenaphthene by GCMS	0.000436	<0.000005	0.00436	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0056	<0.000005	0.056	<0.00005	-	-	-
Fluoranthene by GCMS	0.00637	<0.000005	0.0637	<0.00005	-	-	-
Anthracene by GCMS	0.00191	<0.000005	0.0191	<0.00005	-	-	-
Phenanthrene by GCMS	0.0118	<0.000005	0.118	<0.00005	-	-	-
Fluorene by GCMS	0.00219	<0.000005	0.0219	<0.00005	-	-	-
Chrysene by GCMS	0.000235	<0.000005	0.00235	<0.00005	-	-	-
Pyrene by GCMS	0.00425	<0.000005	0.0425	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000257	<0.000005	0.00257	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000687	<0.000005	0.000687	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000268	<0.000002	0.000268	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0418	<0.000082	0.418	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	1,790.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676223
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.022	<0.01	0.22	<0.1	-	-	-
Aromatics >EC16-EC21	0.077	<0.01	0.77	<0.1	-	-	-
Aromatics >EC21-EC35	0.023	<0.01	0.23	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.122	<0.01	1.22	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.125	<0.01	1.25	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	1,790.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.4
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676231
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00585	<0.001	0.0585	<0.01	-	-	-
Copper	0.00618	<0.0003	0.0618	<0.003	-	-	-
Lead	0.00218	<0.0002	0.0218	<0.002	-	-	-
Manganese	0.00984	<0.003	0.0984	<0.03	-	-	-
Nickel	0.000642	<0.0004	0.00642	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0104	<0.001	0.104	<0.01	-	-	-
Zinc	0.00436	<0.001	0.0436	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.204	<0.019	2.04	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0124	<0.00001	0.124	<0.0001	-	-	-
Acenaphthene by GCMS	0.000506	<0.000005	0.00506	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00511	<0.000005	0.0511	<0.00005	-	-	-
Fluoranthene by GCMS	0.00673	<0.000005	0.0673	<0.00005	-	-	-
Anthracene by GCMS	0.00244	<0.000005	0.0244	<0.00005	-	-	-
Phenanthrene by GCMS	0.0161	<0.000005	0.161	<0.00005	-	-	-
Fluorene by GCMS	0.00281	<0.000005	0.0281	<0.00005	-	-	-
Chrysene by GCMS	0.000301	<0.000005	0.00301	<0.00005	-	-	-
Pyrene by GCMS	0.00463	<0.000005	0.0463	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000285	<0.000005	0.00285	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000709	<0.000005	0.000709	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000253	<0.000005	0.000253	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000033	<0.000002	0.00033	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000764	<0.000005	0.0000764	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0514	<0.000082	0.514	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.63
Conductivity (µS/cm)	1,520.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.4
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676231
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC16-EC21	0.088	<0.01	0.88	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.104	<0.01	1.04	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.106	<0.01	1.06	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.63
Conductivity (µS/cm)	1,520.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676235
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00293	<0.001	0.0293	<0.01	-	-	-
Copper	0.00394	<0.0003	0.0394	<0.003	-	-	-
Lead	0.000305	<0.0002	0.00305	<0.002	-	-	-
Manganese	0.0386	<0.003	0.386	<0.03	-	-	-
Nickel	0.000614	<0.0004	0.00614	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0301	<0.001	0.301	<0.01	-	-	-
Zinc	0.0491	<0.001	0.491	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0554	<0.019	0.554	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0456	<0.00001	0.456	<0.0001	-	-	-
Acenaphthene by GCMS	0.0021	<0.000005	0.021	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0396	<0.000005	0.396	<0.00005	-	-	-
Fluoranthene by GCMS	0.00989	<0.000005	0.0989	<0.00005	-	-	-
Anthracene by GCMS	0.00844	<0.000005	0.0844	<0.00005	-	-	-
Phenanthrene by GCMS	0.0312	<0.000005	0.312	<0.00005	-	-	-
Fluorene by GCMS	0.0163	<0.000005	0.163	<0.00005	-	-	-
Chrysene by GCMS	0.00038	<0.000005	0.0038	<0.00005	-	-	-
Pyrene by GCMS	0.00582	<0.000005	0.0582	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000364	<0.000005	0.00364	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000092	<0.000005	0.00092	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000309	<0.000005	0.000309	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000541	<0.000002	0.000541	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000096	<0.000005	0.000096	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000199	<0.000005	0.000199	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.16	<0.000082	1.6	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.072	<0.05	0.72	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.63
Conductivity (µS/cm)	1,180.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676235
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.034	<0.01	0.34	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.023	<0.01	0.23	<0.1	-	-	-
Aromatics >EC12-EC16	0.092	<0.01	0.92	<0.1	-	-	-
Aromatics >EC16-EC21	0.167	<0.01	1.67	<0.1	-	-	-
Aromatics >EC21-EC35	0.024	<0.01	0.24	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.283	<0.01	2.83	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.356	<0.01	3.56	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.63
Conductivity (µS/cm)	1,180.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.154	**Natural Moisture Content (%)**	71.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	58.4
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676239
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	2.80 - 2.80

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	5.67	<0.2	56.7	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.108	<0.05	1.08	<0.5	-	-	-
Arsenic	0.00207	<0.0005	0.0207	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00203	<0.001	0.0203	<0.01	-	-	-
Copper	0.00236	<0.0003	0.0236	<0.003	-	-	-
Lead	0.00915	<0.0002	0.0915	<0.002	-	-	-
Manganese	0.0667	<0.003	0.667	<0.03	-	-	-
Nickel	0.00286	<0.0004	0.0286	<0.004	-	-	-
Selenium	0.00191	<0.001	0.0191	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.019	<0.001	0.19	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.125	<0.019	1.25	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000475	<0.00001	0.00475	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000548	<0.000005	0.000548	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000268	<0.000005	0.00268	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000623	<0.000005	0.000623	<0.00005	-	-	-
Anthracene by GCMS	0.0000283	<0.000005	0.000283	<0.00005	-	-	-
Phenanthrene by GCMS	0.00022	<0.000005	0.0022	<0.00005	-	-	-
Fluorene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000526	<0.000005	0.000526	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00129	<0.000082	0.0129	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	8.44
Conductivity (µS/cm)	379.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.836

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.154	**Natural Moisture Content (%)**	71.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	58.4
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676239
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D2
Depth (m)	2.80 - 2.80

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	8.44
Conductivity (µS/cm)	379.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.836

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676249
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.211	<0.05	2.11	<0.5	-	-	-
Arsenic	0.00484	<0.0005	0.0484	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00477	<0.0003	0.0477	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000722	<0.0004	0.00722	<0.004	-	-	-
Selenium	0.00254	<0.001	0.0254	<0.01	-	-	-
Vanadium	0.203	<0.001	2.03	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.233	<0.019	2.33	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00063	<0.00001	0.0063	<0.0001	-	-	-
Acenaphthene by GCMS	0.000258	<0.000005	0.00258	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00219	<0.000005	0.0219	<0.00005	-	-	-
Fluoranthene by GCMS	0.00369	<0.000005	0.0369	<0.00005	-	-	-
Anthracene by GCMS	0.000594	<0.000005	0.00594	<0.00005	-	-	-
Phenanthrene by GCMS	0.00356	<0.000005	0.0356	<0.00005	-	-	-
Fluorene by GCMS	0.00139	<0.000005	0.0139	<0.00005	-	-	-
Chrysene by GCMS	0.000702	<0.000005	0.00702	<0.00005	-	-	-
Pyrene by GCMS	0.00263	<0.000005	0.0263	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000921	<0.000005	0.00921	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00133	<0.000005	0.0133	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000532	<0.000005	0.00532	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000902	<0.000002	0.00902	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000196	<0.000005	0.00196	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000758	<0.000005	0.00758	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000899	<0.000005	0.00899	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0212	<0.000082	0.212	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.32
Conductivity (µS/cm)	173.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676249
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.014	<0.01	0.14	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.037	<0.01	0.37	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.32
Conductivity (µS/cm)	173.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	19.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676254
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.446	<0.2	4.46	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000835	<0.00001	0.000835	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00475	<0.001	0.0475	<0.01	-	-	-
Copper	0.00534	<0.0003	0.0534	<0.003	-	-	-
Lead	0.0011	<0.0002	0.011	<0.002	-	-	-
Manganese	0.114	<0.003	1.14	<0.03	-	-	-
Nickel	0.00106	<0.0004	0.0106	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.11	<0.001	1.1	<0.01	-	-	-
Zinc	0.00403	<0.001	0.0403	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.342	<0.019	3.42	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00053	<0.00001	0.0053	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000594	<0.000005	0.000594	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Fluoranthene by GCMS	0.000158	<0.000005	0.00158	<0.00005	-	-	-
Anthracene by GCMS	0.0000238	<0.000005	0.000238	<0.00005	-	-	-
Phenanthrene by GCMS	0.000147	<0.000005	0.00147	<0.00005	-	-	-
Fluorene by GCMS	0.0000336	<0.000005	0.000336	<0.00005	-	-	-
Chrysene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Pyrene by GCMS	0.000207	<0.000005	0.00207	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00129	<0.000082	0.0129	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.26
Conductivity (µS/cm)	823.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	19.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676254
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.01	<0.01	0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.03	<0.01	0.3	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.26
Conductivity (µS/cm)	823.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676258
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000197	<0.00001	0.000197	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000998	<0.0005	0.00998	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00679	<0.0003	0.0679	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000993	<0.0004	0.00993	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.433	<0.001	4.33	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.157	<0.00002	1.57	<0.0002	-	-	-
Acenaphthene by GCMS	0.00254	<0.00001	0.0254	<0.0001	-	-	-
Acenaphthylene by GCMS	0.0532	<0.00001	0.532	<0.0001	-	-	-
Fluoranthene by GCMS	0.0043	<0.00001	0.043	<0.0001	-	-	-
Anthracene by GCMS	0.00296	<0.00001	0.0296	<0.0001	-	-	-
Phenanthrene by GCMS	0.0211	<0.00001	0.211	<0.0001	-	-	-
Fluorene by GCMS	0.0159	<0.00001	0.159	<0.0001	-	-	-
Chrysene by GCMS	0.000573	<0.00001	0.00573	<0.0001	-	-	-
Pyrene by GCMS	0.00309	<0.00001	0.0309	<0.0001	-	-	-
Benz(a)anthracene by GCMS	0.000506	<0.00001	0.00506	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	0.0005	<0.00001	0.005	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	0.00049	<0.00001	0.0049	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	0.000341	<0.000004	0.00341	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000453	<0.00001	0.00453	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	0.00043	<0.00001	0.0043	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	0.000378	<0.00001	0.00378	<0.0001	-	-	-
PAH 16 EPA Total by GCMS	0.264	<0.000164	2.64	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	1.09	<0.05	10.9	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.014	<0.01	0.14	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.18
Conductivity (µS/cm)	452.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676258
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.029	<0.01	0.29	<0.1	-	-	-
Aliphatics >C10-C12	0.605	<0.01	6.05	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.026	<0.01	0.26	<0.1	-	-	-
Aromatics >EC10-EC12	0.403	<0.01	4.03	<0.1	-	-	-
Aromatics >EC12-EC16	0.038	<0.01	0.38	<0.1	-	-	-
Aromatics >EC16-EC21	0.021	<0.01	0.21	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.059	<0.01	0.59	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	1.15	<0.01	11.5	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.18
Conductivity (µS/cm)	452.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676263
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.12	<0.05	1.2	<0.5	-	-	-
Arsenic	0.000882	<0.0005	0.00882	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00132	<0.001	0.0132	<0.01	-	-	-
Copper	0.00646	<0.0003	0.0646	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000998	<0.0004	0.00998	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.275	<0.001	2.75	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.298	<0.00001	2.98	<0.0001	-	-	-
Acenaphthene by GCMS	0.00576	<0.000005	0.0576	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0693	<0.000005	0.693	<0.00005	-	-	-
Fluoranthene by GCMS	0.0124	<0.000005	0.124	<0.00005	-	-	-
Anthracene by GCMS	0.011	<0.000005	0.11	<0.00005	-	-	-
Phenanthrene by GCMS	0.0469	<0.000005	0.469	<0.00005	-	-	-
Fluorene by GCMS	0.0363	<0.000005	0.363	<0.00005	-	-	-
Chrysene by GCMS	0.000482	<0.000005	0.00482	<0.00005	-	-	-
Pyrene by GCMS	0.00863	<0.000005	0.0863	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000571	<0.000005	0.00571	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000708	<0.000005	0.000708	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000633	<0.000002	0.000633	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000797	<0.000005	0.0000797	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000243	<0.000005	0.000243	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.49	<0.000082	4.9	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.307	<0.05	3.07	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.25
Conductivity (µS/cm)	527.00
Temperature (°C)	21.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676263
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.171	<0.01	1.71	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.114	<0.01	1.14	<0.1	-	-	-
Aromatics >EC12-EC16	0.196	<0.01	1.96	<0.1	-	-	-
Aromatics >EC16-EC21	0.2	<0.01	2	<0.1	-	-	-
Aromatics >EC21-EC35	0.018	<0.01	0.18	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.414	<0.01	4.14	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.721	<0.01	7.21	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.25
Conductivity (µS/cm)	527.00
Temperature (°C)	21.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.132	**Natural Moisture Content (%)**	47.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	68
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676272
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D3
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	2.3	<0.2	23	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.073	<0.05	0.73	<0.5	-	-	-
Arsenic	0.00103	<0.0005	0.0103	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0277	<0.003	0.277	<0.03	-	-	-
Nickel	0.000723	<0.0004	0.00723	<0.004	-	-	-
Selenium	0.0021	<0.001	0.021	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00144	<0.00001	0.0144	<0.0001	-	-	-
Acenaphthene by GCMS	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000605	<0.000005	0.000605	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000303	<0.000005	0.000303	<0.00005	-	-	-
Anthracene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000779	<0.000005	0.000779	<0.00005	-	-	-
Fluorene by GCMS	0.0000739	<0.000005	0.000739	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000441	<0.000005	0.000441	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00185	<0.000082	0.0185	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	7.56
Conductivity (µS/cm)	266.00
Temperature (°C)	21.50
Volume Leachant (Litres)	0.858

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.132	**Natural Moisture Content (%)**	47.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	68
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676272
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D3
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	7.56
Conductivity (µS/cm)	266.00
Temperature (°C)	21.50
Volume Leachant (Litres)	0.858

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676278
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.266	<0.2	2.66	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000298	<0.00001	0.000298	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000947	<0.0005	0.00947	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00326	<0.001	0.0326	<0.01	-	-	-
Copper	0.00462	<0.0003	0.0462	<0.003	-	-	-
Lead	0.000764	<0.0002	0.00764	<0.002	-	-	-
Manganese	0.011	<0.003	0.11	<0.03	-	-	-
Nickel	0.000762	<0.0004	0.00762	<0.004	-	-	-
Selenium	0.00113	<0.001	0.0113	<0.01	-	-	-
Vanadium	0.153	<0.001	1.53	<0.01	-	-	-
Zinc	0.00193	<0.001	0.0193	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00179	<0.00001	0.0179	<0.0001	-	-	-
Acenaphthene by GCMS	0.000251	<0.000005	0.00251	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00304	<0.000005	0.0304	<0.00005	-	-	-
Fluoranthene by GCMS	0.000666	<0.000005	0.00666	<0.00005	-	-	-
Anthracene by GCMS	0.000194	<0.000005	0.00194	<0.00005	-	-	-
Phenanthrene by GCMS	0.00099	<0.000005	0.0099	<0.00005	-	-	-
Fluorene by GCMS	0.0007	<0.000005	0.007	<0.00005	-	-	-
Chrysene by GCMS	0.0000299	<0.000005	0.000299	<0.00005	-	-	-
Pyrene by GCMS	0.000497	<0.000005	0.00497	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00818	<0.000082	0.0818	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.25
Conductivity (µS/cm)	571.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676278
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.081	<0.01	0.81	<0.1	-	-	-
Total Aliphatics >C12-C35	0.081	<0.01	0.81	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.083	<0.01	0.83	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.081	<0.01	0.81	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.25
Conductivity (µS/cm)	571.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.7
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676285
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.259	<0.2	2.59	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000274	<0.00001	0.000274	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00106	<0.0005	0.0106	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00266	<0.001	0.0266	<0.01	-	-	-
Copper	0.00713	<0.0003	0.0713	<0.003	-	-	-
Lead	0.00454	<0.0002	0.0454	<0.002	-	-	-
Manganese	0.105	<0.003	1.05	<0.03	-	-	-
Nickel	0.000945	<0.0004	0.00945	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.237	<0.001	2.37	<0.01	-	-	-
Zinc	0.0233	<0.001	0.233	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.448	<0.019	4.48	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.339	<0.00001	3.39	<0.0001	-	-	-
Acenaphthene by GCMS	0.00895	<0.000005	0.0895	<0.00005	-	-	-
Acenaphthylene by GCMS	0.139	<0.000005	1.39	<0.00005	-	-	-
Fluoranthene by GCMS	0.00654	<0.000005	0.0654	<0.00005	-	-	-
Anthracene by GCMS	0.00456	<0.000005	0.0456	<0.00005	-	-	-
Phenanthrene by GCMS	0.0373	<0.000005	0.373	<0.00005	-	-	-
Fluorene by GCMS	0.0367	<0.000005	0.367	<0.00005	-	-	-
Chrysene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Pyrene by GCMS	0.00408	<0.000005	0.0408	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00016	<0.000005	0.0016	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000455	<0.000005	0.000455	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000223	<0.000002	0.000223	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.577	<0.000082	5.77	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.59	<0.05	5.9	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.05
Conductivity (µS/cm)	425.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.7
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676285
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.012	<0.01	0.12	<0.1	-	-	-
Aliphatics >C10-C12	0.321	<0.01	3.21	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC10-EC12	0.214	<0.01	2.14	<0.1	-	-	-
Aromatics >EC12-EC16	0.248	<0.01	2.48	<0.1	-	-	-
Aromatics >EC16-EC21	0.106	<0.01	1.06	<0.1	-	-	-
Aromatics >EC21-EC35	0.01	<0.01	0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.364	<0.01	3.64	<0.1	-	-	-
Benzene by GC	0.007	<0.007	0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.955	<0.01	9.55	<0.1	-	-	-
Toluene by GC	0.004	<0.004	0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	0.003	<0.003	0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.05
Conductivity (µS/cm)	425.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.3
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676298
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00433	<0.0005	0.0433	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00416	<0.0003	0.0416	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000945	<0.0004	0.00945	<0.004	-	-	-
Selenium	0.0045	<0.001	0.045	<0.01	-	-	-
Vanadium	0.0633	<0.001	0.633	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000053	<0.00001	0.00053	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Fluoranthene by GCMS	0.000081	<0.000005	0.00081	<0.00005	-	-	-
Anthracene by GCMS	0.0000143	<0.000005	0.000143	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000729	<0.000005	0.000729	<0.00005	-	-	-
Fluorene by GCMS	0.0000164	<0.000005	0.000164	<0.00005	-	-	-
Chrysene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Pyrene by GCMS	0.0000709	<0.000005	0.000709	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000704	<0.000005	0.0000704	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000288	<0.000005	0.000288	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000174	<0.000002	0.000174	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000606	<0.000005	0.0000606	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000192	<0.000005	0.000192	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000444	<0.000082	0.00444	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	10.08
Conductivity (µS/cm)	246.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.3
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676298
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	10.08
Conductivity (µS/cm)	246.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	100
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676302
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00383	<0.001	0.0383	<0.01	-	-	-
Copper	0.00342	<0.0003	0.0342	<0.003	-	-	-
Lead	0.00506	<0.0002	0.0506	<0.002	-	-	-
Manganese	0.0482	<0.003	0.482	<0.03	-	-	-
Nickel	0.000491	<0.0004	0.00491	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00197	<0.001	0.0197	<0.01	-	-	-
Zinc	0.0326	<0.001	0.326	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.136	<0.019	1.36	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00306	<0.00001	0.0306	<0.0001	-	-	-
Acenaphthene by GCMS	0.000879	<0.000005	0.00879	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00191	<0.000005	0.0191	<0.00005	-	-	-
Fluoranthene by GCMS	0.00153	<0.000005	0.0153	<0.00005	-	-	-
Anthracene by GCMS	0.000402	<0.000005	0.00402	<0.00005	-	-	-
Phenanthrene by GCMS	0.00359	<0.000005	0.0359	<0.00005	-	-	-
Fluorene by GCMS	0.000549	<0.000005	0.00549	<0.00005	-	-	-
Chrysene by GCMS	0.0000327	<0.000005	0.000327	<0.00005	-	-	-
Pyrene by GCMS	0.00111	<0.000005	0.0111	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000374	<0.000005	0.000374	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000816	<0.000005	0.0000816	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000476	<0.000002	0.0000476	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0131	<0.000082	0.131	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.01
Conductivity (µS/cm)	4.82
Temperature (°C)	21.90
Volume Leachant (Litres)	0.900

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.090	**Natural Moisture Content (%)**	0
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	100
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676302
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.012	<0.01	0.12	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.012	<0.01	0.12	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.041	<0.01	0.41	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.01
Conductivity (µS/cm)	4.82
Temperature (°C)	21.90
Volume Leachant (Litres)	0.900

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.2
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676309
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0023	<0.001	0.023	<0.01	-	-	-
Copper	0.00366	<0.0003	0.0366	<0.003	-	-	-
Lead	0.0622	<0.0002	0.622	<0.002	-	-	-
Manganese	0.0211	<0.003	0.211	<0.03	-	-	-
Nickel	0.000447	<0.0004	0.00447	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00177	<0.001	0.0177	<0.01	-	-	-
Zinc	0.0056	<0.001	0.056	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.421	<0.019	4.21	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00751	<0.00001	0.0751	<0.0001	-	-	-
Acenaphthene by GCMS	0.000667	<0.000005	0.00667	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000446	<0.000005	0.000446	<0.00005	-	-	-
Fluoranthene by GCMS	0.00236	<0.000005	0.0236	<0.00005	-	-	-
Anthracene by GCMS	0.000201	<0.000005	0.00201	<0.00005	-	-	-
Phenanthrene by GCMS	0.00584	<0.000005	0.0584	<0.00005	-	-	-
Fluorene by GCMS	0.0000633	<0.000005	0.000633	<0.00005	-	-	-
Chrysene by GCMS	0.000147	<0.000005	0.00147	<0.00005	-	-	-
Pyrene by GCMS	0.00161	<0.000005	0.0161	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000906	<0.000005	0.000906	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000315	<0.000005	0.000315	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000927	<0.000002	0.0000927	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0186	<0.000082	0.186	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	12.41
Conductivity (µS/cm)	7.22
Temperature (°C)	21.00
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.2
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676309
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.022	<0.01	0.22	<0.1	-	-	-
Aromatics >EC16-EC21	0.051	<0.01	0.51	<0.1	-	-	-
Aromatics >EC21-EC35	0.016	<0.01	0.16	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.089	<0.01	0.89	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.09	<0.01	0.9	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	12.41
Conductivity (µS/cm)	7.22
Temperature (°C)	21.00
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676314
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000205	<0.00001	0.000205	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00203	<0.001	0.0203	<0.01	-	-	-
Copper	0.00168	<0.0003	0.0168	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0248	<0.001	0.248	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000633	<0.00001	0.00633	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000712	<0.000005	0.000712	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000179	<0.000005	0.00179	<0.00005	-	-	-
Fluoranthene by GCMS	0.000612	<0.000005	0.00612	<0.00005	-	-	-
Anthracene by GCMS	0.0000514	<0.000005	0.000514	<0.00005	-	-	-
Phenanthrene by GCMS	0.000507	<0.000005	0.00507	<0.00005	-	-	-
Fluorene by GCMS	0.0000736	<0.000005	0.000736	<0.00005	-	-	-
Chrysene by GCMS	0.0000394	<0.000005	0.000394	<0.00005	-	-	-
Pyrene by GCMS	0.00057	<0.000005	0.0057	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000257	<0.000005	0.000257	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000501	<0.000002	0.0000501	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00278	<0.000082	0.0278	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.70
Conductivity (µS/cm)	1,250.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676314
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.70
Conductivity (µS/cm)	1,250.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676319
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.32	<0.2	13.2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00158	<0.0005	0.0158	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00236	<0.001	0.0236	<0.01	-	-	-
Copper	0.0172	<0.0003	0.172	<0.003	-	-	-
Lead	0.000381	<0.0002	0.00381	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00309	<0.0004	0.0309	<0.004	-	-	-
Selenium	0.00363	<0.001	0.0363	<0.01	-	-	-
Vanadium	0.0416	<0.001	0.416	<0.01	-	-	-
Zinc	0.00237	<0.001	0.0237	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.151	<0.00001	1.51	<0.0001	-	-	-
Acenaphthene by GCMS	0.0026	<0.000005	0.026	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000577	<0.000005	0.00577	<0.00005	-	-	-
Fluoranthene by GCMS	0.00162	<0.000005	0.0162	<0.00005	-	-	-
Anthracene by GCMS	0.00126	<0.000005	0.0126	<0.00005	-	-	-
Phenanthrene by GCMS	0.00525	<0.000005	0.0525	<0.00005	-	-	-
Fluorene by GCMS	0.00166	<0.000005	0.0166	<0.00005	-	-	-
Chrysene by GCMS	0.0000974	<0.000005	0.000974	<0.00005	-	-	-
Pyrene by GCMS	0.00113	<0.000005	0.0113	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000559	<0.000005	0.000559	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000576	<0.000005	0.0000576	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000103	<0.000002	0.000103	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.165	<0.000082	1.65	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.152	<0.05	1.52	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	907.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676319
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C1
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.084	<0.01	0.84	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.056	<0.01	0.56	<0.1	-	-	-
Aromatics >EC12-EC16	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics >EC16-EC21	0.024	<0.01	0.24	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.043	<0.01	0.43	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.195	<0.01	1.95	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	907.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676328
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000807	<0.0005	0.00807	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00771	<0.001	0.0771	<0.01	-	-	-
Copper	0.00549	<0.0003	0.0549	<0.003	-	-	-
Lead	0.000918	<0.0002	0.00918	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00057	<0.0004	0.0057	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00102	<0.001	0.0102	<0.01	-	-	-
Zinc	0.0031	<0.001	0.031	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000708	<0.00001	0.00708	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000213	<0.000005	0.000213	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Fluoranthene by GCMS	0.000856	<0.000005	0.00856	<0.00005	-	-	-
Anthracene by GCMS	0.0000584	<0.000005	0.000584	<0.00005	-	-	-
Phenanthrene by GCMS	0.000561	<0.000005	0.00561	<0.00005	-	-	-
Fluorene by GCMS	0.0000527	<0.000005	0.000527	<0.00005	-	-	-
Chrysene by GCMS	0.0000419	<0.000005	0.000419	<0.00005	-	-	-
Pyrene by GCMS	0.000805	<0.000005	0.00805	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000253	<0.000005	0.000253	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000184	<0.000005	0.000184	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000573	<0.000005	0.0000573	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000684	<0.000002	0.0000684	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00329	<0.000082	0.0329	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.18
Conductivity (µS/cm)	3,300.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676328
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.18
Conductivity (µS/cm)	3,300.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.893

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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88.7
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676332
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00364	<0.001	0.0364	<0.01	-	-	-
Copper	0.00139	<0.0003	0.0139	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0251	<0.001	0.251	<0.01	-	-	-
Zinc	0.00104	<0.001	0.0104	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.151	<0.00005	1.51	<0.0005	-	-	-
Acenaphthene by GCMS	0.000329	<0.000025	0.00329	<0.00025	-	-	-
Acenaphthylene by GCMS	0.003	<0.000025	0.03	<0.00025	-	-	-
Fluoranthene by GCMS	0.000748	<0.000025	0.00748	<0.00025	-	-	-
Anthracene by GCMS	0.0004	<0.000025	0.004	<0.00025	-	-	-
Phenanthrene by GCMS	0.0019	<0.000025	0.019	<0.00025	-	-	-
Fluorene by GCMS	0.000755	<0.000025	0.00755	<0.00025	-	-	-
Chrysene by GCMS	0.000276	<0.000025	0.00276	<0.00025	-	-	-
Pyrene by GCMS	0.000679	<0.000025	0.00679	<0.00025	-	-	-
Benz(a)anthracene by GCMS	0.000227	<0.000025	0.00227	<0.00025	-	-	-
Benzo(b)fluoranthene by GCMS	0.00022	<0.000025	0.0022	<0.00025	-	-	-
Benzo(k)fluoranthene by GCMS	0.000198	<0.000025	0.00198	<0.00025	-	-	-
Benzo(a)pyrene by GCMS	0.000239	<0.00001	0.00239	<0.0001	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000147	<0.000025	0.00147	<0.00025	-	-	-
Benzo(ghi)perylene by GCMS	0.000144	<0.000025	0.00144	<0.00025	-	-	-
Indeno(123cd)pyrene by GCMS	0.000154	<0.000025	0.00154	<0.00025	-	-	-
PAH 16 EPA Total by GCMS	0.161	<0.00041	1.61	<0.0041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.69
Conductivity (µS/cm)	1,330.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.888

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CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88.7
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676332
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.017	<0.01	0.17	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.012	<0.01	0.12	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.039	<0.01	0.39	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.69
Conductivity (µS/cm)	1,330.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676342
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	3.51	<0.2	35.1	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00484	<0.0005	0.0484	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000791	<0.0003	0.00791	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0336	<0.003	0.336	<0.03	-	-	-
Nickel	0.00164	<0.0004	0.0164	<0.004	-	-	-
Selenium	0.00302	<0.001	0.0302	<0.01	-	-	-
Vanadium	0.0132	<0.001	0.132	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000589	<0.00001	0.000589	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000617	<0.000005	0.0000617	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000136	<0.000005	0.000136	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Fluorene by GCMS	0.00000514	<0.000005	0.0000514	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000113	<0.000082	0.00113	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	8.77
Conductivity (µS/cm)	230.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.883

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CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676342
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	8.77
Conductivity (µS/cm)	230.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.135	**Natural Moisture Content (%)**	50.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676346
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.04	<0.2	10.4	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0424	<0.0005	0.424	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00568	<0.0003	0.0568	<0.003	-	-	-
Lead	0.000576	<0.0002	0.00576	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00587	<0.0004	0.0587	<0.004	-	-	-
Selenium	0.011	<0.001	0.11	<0.01	-	-	-
Vanadium	0.49	<0.001	4.9	<0.01	-	-	-
Zinc	0.00705	<0.001	0.0705	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0189	<0.00002	0.189	<0.0002	-	-	-
Acenaphthene by GCMS	0.000114	<0.00001	0.00114	<0.0001	-	-	-
Acenaphthylene by GCMS	0.000163	<0.00001	0.00163	<0.0001	-	-	-
Fluoranthene by GCMS	0.000241	<0.00001	0.00241	<0.0001	-	-	-
Anthracene by GCMS	0.000138	<0.00001	0.00138	<0.0001	-	-	-
Phenanthrene by GCMS	0.000589	<0.00001	0.00589	<0.0001	-	-	-
Fluorene by GCMS	0.000281	<0.00001	0.00281	<0.0001	-	-	-
Chrysene by GCMS	0.000124	<0.00001	0.00124	<0.0001	-	-	-
Pyrene by GCMS	0.000184	<0.00001	0.00184	<0.0001	-	-	-
Benz(a)anthracene by GCMS	0.000113	<0.00001	0.00113	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	0.000114	<0.00001	0.00114	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	0.000108	<0.00001	0.00108	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	0.0000831	<0.000004	0.000831	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000706	<0.00001	0.000706	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	0.0000661	<0.00001	0.000661	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000668	<0.00001	0.000668	<0.0001	-	-	-
PAH 16 EPA Total by GCMS	0.0214	<0.000164	0.214	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.60
Conductivity (µS/cm)	319.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.855

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.135	**Natural Moisture Content (%)**	50.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	66.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676346
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C2
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.016	<0.01	0.16	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	10.60
Conductivity (µS/cm)	319.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.855

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676355
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000281	<0.00001	0.000281	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00272	<0.001	0.0272	<0.01	-	-	-
Copper	0.00531	<0.0003	0.0531	<0.003	-	-	-
Lead	0.00329	<0.0002	0.0329	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000501	<0.0004	0.00501	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00212	<0.001	0.0212	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0064	<0.00001	0.064	<0.0001	-	-	-
Acenaphthene by GCMS	0.000262	<0.000005	0.00262	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00143	<0.000005	0.0143	<0.00005	-	-	-
Fluoranthene by GCMS	0.00414	<0.000005	0.0414	<0.00005	-	-	-
Anthracene by GCMS	0.000764	<0.000005	0.00764	<0.00005	-	-	-
Phenanthrene by GCMS	0.00584	<0.000005	0.0584	<0.00005	-	-	-
Fluorene by GCMS	0.000956	<0.000005	0.00956	<0.00005	-	-	-
Chrysene by GCMS	0.000164	<0.000005	0.00164	<0.00005	-	-	-
Pyrene by GCMS	0.00325	<0.000005	0.0325	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000168	<0.000005	0.00168	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000483	<0.000005	0.000483	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000176	<0.000002	0.000176	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0235	<0.000082	0.235	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.27
Conductivity (µS/cm)	4,800.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676355
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.27
Conductivity (µS/cm)	4,800.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676360
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.47	<0.2	14.7	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00344	<0.001	0.0344	<0.01	-	-	-
Copper	0.0015	<0.0003	0.015	<0.003	-	-	-
Lead	0.000257	<0.0002	0.00257	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0201	<0.001	0.201	<0.01	-	-	-
Zinc	0.00134	<0.001	0.0134	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00274	<0.00001	0.0274	<0.0001	-	-	-
Acenaphthene by GCMS	0.000573	<0.000005	0.00573	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00102	<0.000005	0.0102	<0.00005	-	-	-
Fluoranthene by GCMS	0.00967	<0.000005	0.0967	<0.00005	-	-	-
Anthracene by GCMS	0.0013	<0.000005	0.013	<0.00005	-	-	-
Phenanthrene by GCMS	0.00323	<0.000005	0.0323	<0.00005	-	-	-
Fluorene by GCMS	0.000718	<0.000005	0.00718	<0.00005	-	-	-
Chrysene by GCMS	0.000337	<0.000005	0.00337	<0.00005	-	-	-
Pyrene by GCMS	0.00573	<0.000005	0.0573	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000392	<0.000005	0.00392	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000931	<0.000005	0.000931	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000266	<0.000005	0.000266	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000352	<0.000002	0.000352	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0259	<0.000082	0.259	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.83
Conductivity (µS/cm)	1,540.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676360
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC16-EC21	0.074	<0.01	0.74	<0.1	-	-	-
Aromatics >EC21-EC35	0.025	<0.01	0.25	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.115	<0.01	1.15	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.116	<0.01	1.16	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.83
Conductivity (µS/cm)	1,540.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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16:25:27 18/06/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676366
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00328	<0.001	0.0328	<0.01	-	-	-
Copper	0.00175	<0.0003	0.0175	<0.003	-	-	-
Lead	0.000763	<0.0002	0.00763	<0.002	-	-	-
Manganese	0.0485	<0.003	0.485	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0091	<0.001	0.091	<0.01	-	-	-
Zinc	0.0021	<0.001	0.021	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.127	<0.019	1.27	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00821	<0.00001	0.0821	<0.0001	-	-	-
Acenaphthene by GCMS	0.000302	<0.000005	0.00302	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00105	<0.000005	0.0105	<0.00005	-	-	-
Fluoranthene by GCMS	0.00457	<0.000005	0.0457	<0.00005	-	-	-
Anthracene by GCMS	0.000669	<0.000005	0.00669	<0.00005	-	-	-
Phenanthrene by GCMS	0.00567	<0.000005	0.0567	<0.00005	-	-	-
Fluorene by GCMS	0.000286	<0.000005	0.00286	<0.00005	-	-	-
Chrysene by GCMS	0.000156	<0.000005	0.00156	<0.00005	-	-	-
Pyrene by GCMS	0.00315	<0.000005	0.0315	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000382	<0.000005	0.000382	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000157	<0.000002	0.000157	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0242	<0.000082	0.242	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.97
Conductivity (µS/cm)	2,630.00
Temperature (°C)	21.30
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676366
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.058	<0.01	0.58	<0.1	-	-	-
Aromatics >EC21-EC35	0.017	<0.01	0.17	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.085	<0.01	0.85	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.087	<0.01	0.87	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.97
Conductivity (µS/cm)	2,630.00
Temperature (°C)	21.30
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676376
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.555	<0.2	5.55	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00116	<0.0005	0.0116	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00131	<0.001	0.0131	<0.01	-	-	-
Copper	0.00413	<0.0003	0.0413	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00137	<0.0004	0.0137	<0.004	-	-	-
Selenium	0.00405	<0.001	0.0405	<0.01	-	-	-
Vanadium	0.514	<0.001	5.14	<0.01	-	-	-
Zinc	0.00831	<0.001	0.0831	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00309	<0.00001	0.0309	<0.0001	-	-	-
Acenaphthene by GCMS	0.0021	<0.000005	0.021	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00224	<0.000005	0.0224	<0.00005	-	-	-
Anthracene by GCMS	0.000821	<0.000005	0.00821	<0.00005	-	-	-
Phenanthrene by GCMS	0.00473	<0.000005	0.0473	<0.00005	-	-	-
Fluorene by GCMS	0.00125	<0.000005	0.0125	<0.00005	-	-	-
Chrysene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Pyrene by GCMS	0.00153	<0.000005	0.0153	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000776	<0.000005	0.000776	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000285	<0.000005	0.000285	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000014	<0.000005	0.00014	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000179	<0.000002	0.000179	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000068	<0.000005	0.000068	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.016	<0.000082	0.16	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.07	<0.05	0.7	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.24
Conductivity (µS/cm)	573.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676376
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-C3
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.031	<0.01	0.31	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.021	<0.01	0.21	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.07	<0.01	0.7	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.24
Conductivity (µS/cm)	573.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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16:25:27 18/06/2018

CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676384
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D1
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000639	<0.0005	0.00639	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00606	<0.001	0.0606	<0.01	-	-	-
Copper	0.00208	<0.0003	0.0208	<0.003	-	-	-
Lead	0.000496	<0.0002	0.00496	<0.002	-	-	-
Manganese	0.0166	<0.003	0.166	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00197	<0.001	0.0197	<0.01	-	-	-
Zinc	0.00522	<0.001	0.0522	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00112	<0.00001	0.0112	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000378	<0.000005	0.000378	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000295	<0.000005	0.00295	<0.00005	-	-	-
Fluoranthene by GCMS	0.000418	<0.000005	0.00418	<0.00005	-	-	-
Anthracene by GCMS	0.0000828	<0.000005	0.000828	<0.00005	-	-	-
Phenanthrene by GCMS	0.000519	<0.000005	0.00519	<0.00005	-	-	-
Fluorene by GCMS	0.0000853	<0.000005	0.000853	<0.00005	-	-	-
Chrysene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Pyrene by GCMS	0.000325	<0.000005	0.00325	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0029	<0.000082	0.029	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	3,030.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676384
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D1
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	3,030.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676388
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00136	<0.001	0.0136	<0.01	-	-	-
Copper	0.00276	<0.0003	0.0276	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000829	<0.0004	0.00829	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0358	<0.001	0.358	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000521	<0.00001	0.00521	<0.0001	-	-	-
Acenaphthene by GCMS	0.000168	<0.000005	0.00168	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00068	<0.000005	0.0068	<0.00005	-	-	-
Fluoranthene by GCMS	0.000424	<0.000005	0.00424	<0.00005	-	-	-
Anthracene by GCMS	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Phenanthrene by GCMS	0.00116	<0.000005	0.0116	<0.00005	-	-	-
Fluorene by GCMS	0.000253	<0.000005	0.00253	<0.00005	-	-	-
Chrysene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Pyrene by GCMS	0.000346	<0.000005	0.00346	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00371	<0.000082	0.0371	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.57
Conductivity (µS/cm)	838.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676388
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.57
Conductivity (µS/cm)	838.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.8
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676398
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00288	<0.001	0.0288	<0.01	-	-	-
Copper	0.005	<0.0003	0.05	<0.003	-	-	-
Lead	0.000457	<0.0002	0.00457	<0.002	-	-	-
Manganese	0.00556	<0.003	0.0556	<0.03	-	-	-
Nickel	0.000981	<0.0004	0.00981	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0229	<0.001	0.229	<0.01	-	-	-
Zinc	0.00942	<0.001	0.0942	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0825	<0.00001	0.825	<0.0001	-	-	-
Acenaphthene by GCMS	0.00419	<0.000005	0.0419	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0467	<0.000005	0.467	<0.00005	-	-	-
Fluoranthene by GCMS	0.00638	<0.000005	0.0638	<0.00005	-	-	-
Anthracene by GCMS	0.00464	<0.000005	0.0464	<0.00005	-	-	-
Phenanthrene by GCMS	0.0242	<0.000005	0.242	<0.00005	-	-	-
Fluorene by GCMS	0.0141	<0.000005	0.141	<0.00005	-	-	-
Chrysene by GCMS	0.000179	<0.000005	0.00179	<0.00005	-	-	-
Pyrene by GCMS	0.0044	<0.000005	0.044	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000193	<0.000005	0.00193	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000506	<0.000005	0.000506	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000276	<0.000002	0.000276	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000575	<0.000005	0.0000575	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000123	<0.000005	0.000123	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.188	<0.000082	1.88	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.099	<0.05	0.99	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.67
Conductivity (µS/cm)	1,200.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.8
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676398
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-D1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.049	<0.01	0.49	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	0.003	<0.003	0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.033	<0.01	0.33	<0.1	-	-	-
Aromatics >EC12-EC16	0.095	<0.01	0.95	<0.1	-	-	-
Aromatics >EC16-EC21	0.084	<0.01	0.84	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.179	<0.01	1.79	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.275	<0.01	2.75	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	06-Jun-2018
pH (pH Units)	11.67
Conductivity (µS/cm)	1,200.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates
18/06/2018 16:26:12

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CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676406
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000298	<0.00001	0.000298	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0118	<0.0003	0.118	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00121	<0.0004	0.0121	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0339	<0.001	0.339	<0.01	-	-	-
Zinc	0.00115	<0.001	0.0115	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000825	<0.00001	0.00825	<0.0001	-	-	-
Acenaphthene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000173	<0.000005	0.00173	<0.00005	-	-	-
Fluoranthene by GCMS	0.000443	<0.000005	0.00443	<0.00005	-	-	-
Anthracene by GCMS	0.000073	<0.000005	0.00073	<0.00005	-	-	-
Phenanthrene by GCMS	0.000386	<0.000005	0.00386	<0.00005	-	-	-
Fluorene by GCMS	0.0000453	<0.000005	0.000453	<0.00005	-	-	-
Chrysene by GCMS	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Pyrene by GCMS	0.000381	<0.000005	0.00381	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000522	<0.000005	0.000522	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000943	<0.000002	0.000943	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000228	<0.000005	0.000228	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000759	<0.000005	0.000759	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00305	<0.000082	0.0305	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.61
Conductivity (µS/cm)	977.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
18/06/2018 16:26:12

16:25:27 18/06/2018

CERTIFICATE OF ANALYSIS

SDG: 180604-4 | Client Reference: | Report Number: 460640
Location: Llanwern | Order Number: LLA441 | Superseded Report: 460481

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180604-4
Lab Sample Number(s)	17676406
Sampled Date	01-Jun-2018
Customer Sample Ref.	TP3B-E2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jun-2018
pH (pH Units)	11.61
Conductivity (µS/cm)	977.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
18/06/2018 16:26:12

16:25:27 18/06/2018

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG: 180604-4 Client Reference: Report Number: 460640
Location: Llanwern Order Number: LLA441 Superseded Report: 460481

Test Completion Dates

Lab Sample No(s)	17676298	17676302	17676309	17676319	17676328	17676332	17676342	17676346	17676355	17676360
Customer Sample Ref.	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C1	TP3B-C2	TP3B-C2	TP3B-C2	TP3B-C2	TP3B-C3	TP3B-C3
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.30 - 0.30	1.00 - 1.00	2.00 - 2.00	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	12-Jun-2018		12-Jun-2018		07-Jun-2018		07-Jun-2018		12-Jun-2018	
Ammoniacal Nitrogen	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018
Ammonium Soil by Titration	12-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	11-Jun-2018
Anions by Kone (soil)	12-Jun-2018		12-Jun-2018		12-Jun-2018		12-Jun-2018		12-Jun-2018	
Asbestos ID in Solid Samples	08-Jun-2018		08-Jun-2018		08-Jun-2018		08-Jun-2018		11-Jun-2018	
CEN 10:1 Leachate (1 Stage)	06-Jun-2018	05-Jun-2018	06-Jun-2018	06-Jun-2018	06-Jun-2018	05-Jun-2018	06-Jun-2018	12-Jun-2018	12-Jun-2018	05-Jun-2018
CEN Readings	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	13-Jun-2018	13-Jun-2018	07-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	13-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
Dissolved Metals by ICP-MS	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	11-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
EPH CWG (Aliphatic) GC (S)	07-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	11-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
EPH CWG (Aromatic) GC (S)	07-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
GRO by GC-FID (S)	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018
GRO by GC-FID (W)	12-Jun-2018	08-Jun-2018	12-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018
Mercury Dissolved	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Metals in solid samples by OES	08-Jun-2018	07-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018
PAH by GCMS	07-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018	06-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018
PAH Spec MS - Aqueous (W)	08-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	13-Jun-2018	13-Jun-2018	11-Jun-2018
pH	11-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	06-Jun-2018	06-Jun-2018
pH Value	13-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018
Phenols by HPLC (S)	11-Jun-2018	08-Jun-2018	12-Jun-2018	08-Jun-2018	11-Jun-2018	13-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
Sample description	05-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018	05-Jun-2018	05-Jun-2018
Total Organic Carbon	11-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	06-Jun-2018
Total Sulphate	07-Jun-2018		07-Jun-2018		05-Jun-2018		06-Jun-2018		06-Jun-2018	
Total Sulphur	12-Jun-2018		12-Jun-2018		05-Jun-2018		11-Jun-2018		11-Jun-2018	
TPH CWG (W)	12-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
TPH CWG GC (S)	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018
VOC MS (S)	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018

Lab Sample No(s)	17676366	17676376	17676324	17676350	17676380	17676384	17676388	17676398	17676223	17676231
Customer Sample Ref.	TP3B-C3	TP3B-C3	TP3B-C1-V	TP3B-C2-V	TP3B-C3-V	TP3B-D1	TP3B-D1	TP3B-D1	TP3B-D2	TP3B-D2
AGS Ref.										
Depth	2.00 - 2.00	3.00 - 3.00	4.10 - 4.10	3.80 - 3.80	3.30 - 3.30	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	0.40 - 0.40	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	12-Jun-2018						12-Jun-2018		12-Jun-2018	
Ammoniacal Nitrogen	13-Jun-2018	13-Jun-2018				12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018
Ammonium Soil by Titration	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
Anions by Kone (soil)	12-Jun-2018						12-Jun-2018		12-Jun-2018	
Asbestos ID in Solid Samples	11-Jun-2018						11-Jun-2018		11-Jun-2018	
Asbestos Quantification - Full	14-Jun-2018									
CEN 10:1 Leachate (1 Stage)	06-Jun-2018	06-Jun-2018				05-Jun-2018	12-Jun-2018	06-Jun-2018	05-Jun-2018	06-Jun-2018
CEN Readings	07-Jun-2018	07-Jun-2018				07-Jun-2018	13-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
Dissolved Metals by ICP-MS	11-Jun-2018	12-Jun-2018				12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	12-Jun-2018	11-Jun-2018				11-Jun-2018	12-Jun-2018	09-Jun-2018	12-Jun-2018	11-Jun-2018
EPH CWG (Aliphatic) GC (S)	07-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	12-Jun-2018	11-Jun-2018				11-Jun-2018	12-Jun-2018	09-Jun-2018	12-Jun-2018	11-Jun-2018
EPH CWG (Aromatic) GC (S)	07-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018
GRO by GC-FID (S)	11-Jun-2018	13-Jun-2018	12-Jun-2018	11-Jun-2018	13-Jun-2018	13-Jun-2018	11-Jun-2018	11-Jun-2018	13-Jun-2018	08-Jun-2018
GRO by GC-FID (W)	11-Jun-2018	11-Jun-2018				12-Jun-2018	08-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018
Mercury Dissolved	08-Jun-2018	08-Jun-2018				08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Metals in solid samples by OES	08-Jun-2018	08-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018	08-Jun-2018
PAH by GCMS	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018
PAH Spec MS - Aqueous (W)	11-Jun-2018	08-Jun-2018				08-Jun-2018	13-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018
pH	06-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	06-Jun-2018	06-Jun-2018	12-Jun-2018	06-Jun-2018	12-Jun-2018
pH Value	12-Jun-2018	13-Jun-2018				11-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	13-Jun-2018
Phenols by HPLC (S)	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	12-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	12-Jun-2018
Sample description	05-Jun-2018	05-Jun-2018	05-Jun-2018	06-Jun-2018	06-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018
Total Organic Carbon	11-Jun-2018	11-Jun-2018	06-Jun-2018	11-Jun-2018	12-Jun-2018	06-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018
Total Sulphate	07-Jun-2018						06-Jun-2018		06-Jun-2018	
Total Sulphur	12-Jun-2018						12-Jun-2018		11-Jun-2018	
TPH CWG (W)	12-Jun-2018	11-Jun-2018				12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
TPH CWG GC (S)	11-Jun-2018	13-Jun-2018	12-Jun-2018	11-Jun-2018	13-Jun-2018	13-Jun-2018	11-Jun-2018	11-Jun-2018	13-Jun-2018	08-Jun-2018
VOC MS (S)	13-Jun-2018	13-Jun-2018	07-Jun-2018	08-Jun-2018	11-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018

Validated

CERTIFICATE OF ANALYSIS

SDG: 180604-4 **Client Reference:** **Report Number:** 460640
Location: Llanwern **Order Number:** LLA441 **Superseded Report:** 460481

Lab Sample No(s)	17676235	17676239	17676272	17676278	17676285	17676402	17676244	17676294	17676203	17676254
Customer Sample Ref.	TP3B-D2	TP3B-D2	TP3B-D3	TP3B-D3	TP3B-D3	TP3B-D1-V	TP3B-D2-V	TP3B-D3-V	TP3B-E1	TP3B-E1
AGS Ref.										
Depth	2.00 - 2.00	2.80 - 2.80	0.30 - 0.30	1.00 - 1.00	2.00 - 2.00	2.60 - 2.60	3.00 - 3.00	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	12-Jun-2018			12-Jun-2018					12-Jun-2018	
Ammoniacal Nitrogen	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018				13-Jun-2018	12-Jun-2018
Ammonium Soil by Titration	12-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
Anions by Kone (soil)	12-Jun-2018			12-Jun-2018					12-Jun-2018	
Asbestos ID in Solid Samples	06-Jun-2018			11-Jun-2018					08-Jun-2018	
Asbestos Quantification - Full				15-Jun-2018						
CEN 10:1 Leachate (1 Stage)	06-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018				06-Jun-2018	05-Jun-2018
CEN Readings	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018				07-Jun-2018	07-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
Dissolved Metals by ICP-MS	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018				12-Jun-2018	12-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	09-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018				11-Jun-2018	09-Jun-2018
EPH CWG (Aliphatic) GC (S)	07-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	09-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018				11-Jun-2018	09-Jun-2018
EPH CWG (Aromatic) GC (S)	07-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018
GRO by GC-FID (S)	13-Jun-2018	08-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018	12-Jun-2018	11-Jun-2018	11-Jun-2018
GRO by GC-FID (W)	11-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018				11-Jun-2018	13-Jun-2018
Mercury Dissolved	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018				08-Jun-2018	08-Jun-2018
Metals in solid samples by OES	07-Jun-2018	08-Jun-2018	08-Jun-2018	07-Jun-2018	11-Jun-2018	07-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
PAH by GCMS	07-Jun-2018	07-Jun-2018	12-Jun-2018	07-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018
PAH Spec MS - Aqueous (W)	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018				08-Jun-2018	08-Jun-2018
pH	11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018
pH Value	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018				13-Jun-2018	12-Jun-2018
Phenols by HPLC (S)	08-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Sample description	05-Jun-2018	05-Jun-2018	04-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	06-Jun-2018	04-Jun-2018	05-Jun-2018	05-Jun-2018
Total Organic Carbon	08-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018
Total Sulphate	06-Jun-2018			06-Jun-2018					07-Jun-2018	
Total Sulphur	12-Jun-2018			12-Jun-2018					12-Jun-2018	
TPH CWG (W)	11-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018				11-Jun-2018	13-Jun-2018
TPH CWG GC (S)	13-Jun-2018	08-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018	12-Jun-2018	11-Jun-2018	11-Jun-2018
VOC MS (S)	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	08-Jun-2018	07-Jun-2018	07-Jun-2018	13-Jun-2018	13-Jun-2018

Lab Sample No(s)	17676314	17676207	17676211	17676215	17676406	17676249	17676258	17676263	17676370	17676219
Customer Sample Ref.	TP3B-E1	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E2	TP3B-E3	TP3B-E3	TP3B-E3	TP3B-E1-V	TP3B-E2-V
AGS Ref.										
Depth	2.00 - 2.00	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.20 - 2.20	3.00 - 3.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	12-Jun-2018		12-Jun-2018		12-Jun-2018	12-Jun-2018		12-Jun-2018		
Ammoniacal Nitrogen	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018		
Ammonium Soil by Titration	12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018
Anions by Kone (soil)	12-Jun-2018		12-Jun-2018		12-Jun-2018	12-Jun-2018		12-Jun-2018		
Asbestos ID in Solid Samples	11-Jun-2018		11-Jun-2018		11-Jun-2018	11-Jun-2018		11-Jun-2018		
Asbestos Quantification - Full					14-Jun-2018					
CEN 10:1 Leachate (1 Stage)	05-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	05-Jun-2018		
CEN Readings	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	13-Jun-2018	07-Jun-2018	13-Jun-2018	07-Jun-2018		
Cyanide Comp/Free/Total/Thiocyanate	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
Dissolved Metals by ICP-MS	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018		
EPH CWG (Aliphatic) Aqueous GC (W)	12-Jun-2018	11-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018		
EPH CWG (Aliphatic) GC (S)	11-Jun-2018	07-Jun-2018	11-Jun-2018	07-Jun-2018	07-Jun-2018	12-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	12-Jun-2018	11-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018		
EPH CWG (Aromatic) GC (S)	11-Jun-2018	07-Jun-2018	11-Jun-2018	07-Jun-2018	07-Jun-2018	12-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	07-Jun-2018
GRO by GC-FID (S)	11-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	11-Jun-2018	12-Jun-2018	13-Jun-2018	11-Jun-2018	13-Jun-2018
GRO by GC-FID (W)	08-Jun-2018	11-Jun-2018	13-Jun-2018	08-Jun-2018	08-Jun-2018	13-Jun-2018	08-Jun-2018	11-Jun-2018		
Mercury Dissolved	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018		
Metals in solid samples by OES	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	11-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018
PAH by GCMS	07-Jun-2018	06-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	07-Jun-2018	08-Jun-2018	08-Jun-2018	07-Jun-2018	08-Jun-2018
PAH Spec MS - Aqueous (W)	11-Jun-2018	08-Jun-2018	08-Jun-2018	11-Jun-2018	13-Jun-2018	08-Jun-2018	13-Jun-2018	08-Jun-2018		
pH	06-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	06-Jun-2018	12-Jun-2018
pH Value	12-Jun-2018	13-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	13-Jun-2018		
Phenols by HPLC (S)	11-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	08-Jun-2018
Sample description	05-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018	04-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018	05-Jun-2018
Total Organic Carbon	08-Jun-2018	11-Jun-2018	08-Jun-2018	11-Jun-2018	08-Jun-2018	08-Jun-2018	12-Jun-2018	08-Jun-2018	06-Jun-2018	06-Jun-2018
Total Sulphate	06-Jun-2018		06-Jun-2018		06-Jun-2018	06-Jun-2018		06-Jun-2018		
Total Sulphur	12-Jun-2018		12-Jun-2018		11-Jun-2018	12-Jun-2018		12-Jun-2018		
TPH CWG (W)	12-Jun-2018	11-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	11-Jun-2018		
TPH CWG GC (S)	11-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	11-Jun-2018	13-Jun-2018
VOC MS (S)	13-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	08-Jun-2018	08-Jun-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180604-4	**Client Reference:**		**Report Number:**	460640
Location:	Llanwern	**Order Number:**	LLA441	**Superseded Report:**	460481

Lab Sample No(s)	17676267
Customer Sample Ref.	TP3B-E3-V
AGS Ref.	
Depth	2.30 - 2.30
Type	Soil/Solid (S)

Ammonium Soil by Titration	11-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	12-Jun-2018
EPH CWG (Aliphatic) GC (S)	08-Jun-2018
EPH CWG (Aromatic) GC (S)	08-Jun-2018
GRO by GC-FID (S)	12-Jun-2018
Metals in solid samples by OES	11-Jun-2018
PAH by GCMS	07-Jun-2018
pH	12-Jun-2018
Phenols by HPLC (S)	12-Jun-2018
Sample description	05-Jun-2018
Total Organic Carbon	12-Jun-2018
TPH CWG GC (S)	12-Jun-2018
VOC MS (S)	07-Jun-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors
employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjecte to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Hawarden
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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	18 June 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180607-101
Your Reference:	
Location:	Llanwern
Report No:	460633

We received 23 samples on Thursday June 07, 2018 and 23 of these samples were scheduled for analysis which was completed on Monday June 18, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17700087	40A-D21		0.50 - 0.50	05/06/2018
17700091	40A-D21		1.00 - 1.00	05/06/2018
17700098	40A-D21		2.00 - 2.00	05/06/2018
17700102	40A-D21		3.00 - 3.00	05/06/2018
17700064	40A-D22		0.40 - 0.40	05/06/2018
17700068	40A-D22		0.90 - 0.90	05/06/2018
17700073	40A-D22		2.00 - 2.00	05/06/2018
17700077	40A-D22		2.50 - 2.50	05/06/2018
17700149	40A-D24		0.50 - 0.50	05/06/2018
17700154	40A-D24		1.00 - 1.00	05/06/2018
17700159	40A-D24		2.00 - 2.00	05/06/2018
17700082	40A-D22-V		3.00 - 3.00	05/06/2018
17700163	40A-D24-V		2.40 - 2.40	05/06/2018
17700060	40A-E25		0.50 - 0.50	05/06/2018
17700111	40A-E25		1.00 - 1.00	05/06/2018
17700136	40A-E25		1.40 - 1.40	05/06/2018
17700140	40A-E25		2.00 - 2.00	05/06/2018
17700144	40A-E25-V		2.80 - 2.80	05/06/2018
17700107	40A-G22		0.40 - 0.40	05/06/2018
17700117	40A-G22		1.00 - 1.00	05/06/2018
17700122	40A-G22		2.00 - 2.00	05/06/2018
17700126	40A-G22		3.00 - 3.00	05/06/2018
17700131	40A-G22-V		3.20 - 3.20	05/06/2018

Maximum Sample/Coolbox Temperature (°C) :

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

9.4

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																		
			17700087			17700091			17700098			17700102			17700064			17700068			17700073
			Customer Sample Reference																		
			40A-D21			40A-D21			40A-D21			40A-D21			40A-D22			40A-D22			40A-D22
			AGS Reference																		
			Depth (m)																		
			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			3.00 - 3.00			0.40 - 0.40			0.90 - 0.90			2.00 - 2.00
			Container																		
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type																		
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10					X						X						X		
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 23		X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 10					X						X						X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10				X						X						X			
CEN Readings	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 42	X	X		X	X		X	X		X	X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 23		X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 23		X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 23			X			X			X			X			X			X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X
Mercury Dissolved	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X

17700060	40A-E25		0.50 - 0.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
17700163	40A-D24-V		2.40 - 2.40	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X						
17700082	40A-D22-V		3.00 - 3.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X						
17700159	40A-D24		2.00 - 2.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
17700154	40A-D24		1.00 - 1.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X						
				1kg TUB	S		X				X	X	X	X		X				X		X	X
17700149	40A-D24		0.50 - 0.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
17700077	40A-D22		2.50 - 2.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
17700073	40A-D22		2.00 - 2.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X						

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																			
			17700087			17700091			17700098			17700102			17700064			17700068			17700073	
			Customer Sample Reference																			
			40A-D21			40A-D21			40A-D21			40A-D21			40A-D22			40A-D22			40A-D22	
			AGS Reference																			
			Depth (m)																			
			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			3.00 - 3.00			0.40 - 0.40			0.90 - 0.90			2.00 - 2.00	
			Container																			
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	
			Sample Type																			
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 23		X			X			X			X			X			X			
PAH by GCMS	All	NDPs: 0 Tests: 23		X			X			X			X			X			X			
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X	
pH	All	NDPs: 0 Tests: 23		X			X			X			X			X			X			
pH Value	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 23		X			X			X			X			X			X			
Sample description	All	NDPs: 0 Tests: 23		X			X			X			X			X			X			
Total Organic Carbon	All	NDPs: 0 Tests: 23		X			X			X			X			X			X			
Total Sulphate	All	NDPs: 0 Tests: 10					X						X						X			
Total Sulphur	All	NDPs: 0 Tests: 10					X						X						X			
TPH CWG (W)	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 23		X			X			X			X			X			X			
VOC MS (S)	All	NDPs: 0 Tests: 23			X			X			X			X			X			X		

17700060	40A-E25		0.50 - 0.50	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB
				S	S	S
					X	
					X	
						X
					X	
					X	
						X
					X	
					X	
					X	
					X	
					X	
					X	
						X

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17700111			17700136			17700140			17700144		17700107			17700117			17700122
Customer Sample Reference			40A-E25			40A-E25			40A-E25			40A-E25-V		40A-G22			40A-G22			40A-G22
AGS Reference																				
Depth (m)			1.00 - 1.00			1.40 - 1.40			2.00 - 2.00			2.80 - 2.80		0.40 - 0.40			1.00 - 1.00			2.00 - 2.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10					X											X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 19	X			X			X					X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 23		X			X			X		X			X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 10					X											X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10				X											X				
CEN Readings	All	NDPs: 0 Tests: 19	X			X			X					X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 42	X	X		X	X		X	X		X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 19	X			X			X					X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19	X			X			X					X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 23		X			X			X		X			X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19	X			X			X					X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 23		X			X			X		X			X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 23			X			X			X		X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 19	X			X			X					X			X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 19	X			X			X					X			X			X	

17700131	40A-G22-V		3.20 - 3.20	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S				X				X				X				X			
17700126	40A-G22		3.00 - 3.00	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S		X		X		X				X				X				X			
				1kg TUB	S			X				X		X		X		X		X				X		X
17700122	40A-G22		2.00 - 2.00	60g VOC (ALE215)	S																	X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17700111			17700136			17700140			17700144		17700107			17700117			17700122
Customer Sample Reference			40A-E25			40A-E25			40A-E25			40A-E25-V		40A-G22			40A-G22			40A-G22
AGS Reference																				
Depth (m)			1.00 - 1.00			1.40 - 1.40			2.00 - 2.00			2.80 - 2.80		0.40 - 0.40			1.00 - 1.00			2.00 - 2.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 23		X			X			X		X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 23		X			X			X		X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 19	X			X			X					X			X			X	
pH	All	NDPs: 0 Tests: 23		X			X			X		X			X			X			X
pH Value	All	NDPs: 0 Tests: 19	X			X			X					X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 23		X			X			X		X			X			X			X
Sample description	All	NDPs: 0 Tests: 23		X			X			X		X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 23		X			X			X		X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 10					X											X			
Total Sulphur	All	NDPs: 0 Tests: 10					X											X			
TPH CWG (W)	All	NDPs: 0 Tests: 19	X			X			X					X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 23		X			X			X		X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 23			X			X			X		X			X			X		

17700131	40A-G22-V		3.20 - 3.20	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X		X			X			X		X		X				X	
17700126	40A-G22		3.00 - 3.00	60g VOC (ALE215)	S																		X	
				250g Amber Jar (ALE210)	S		X		X			X			X		X		X		X		X	
				1kg TUB	S					X			X									X		
17700122	40A-G22		2.00 - 2.00	60g VOC (ALE215)	S																		X	

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17700087	40A-D21	0.50 - 0.50	Dark Brown	Loamy Sand	Crushed Brick	Stones
17700091	40A-D21	1.00 - 1.00	Dark Brown	Sandy Loam	Crushed Brick	Stones
17700098	40A-D21	2.00 - 2.00	Dark Brown	Stone/Soil	Stones	N/A
17700102	40A-D21	3.00 - 3.00	Dark Brown	Stone/Soil	Stones	None
17700064	40A-D22	0.40 - 0.40	Dark Brown	Loamy Sand	Stones	Vegetation
17700068	40A-D22	0.90 - 0.90	Black	Loamy Sand	Stones	Vegetation
17700073	40A-D22	2.00 - 2.00	Black	Loamy Sand	Stones	None
17700077	40A-D22	2.50 - 2.50	Black	Sandy Loam	Stones	None
17700149	40A-D24	0.50 - 0.50	Black	Loamy Sand	Stones	Vegetation
17700154	40A-D24	1.00 - 1.00	Black	Silty Clay Loam	Stones	None
17700159	40A-D24	2.00 - 2.00	Grey	Sandy Clay	Vegetation	Stones
17700082	40A-D22-V	3.00 - 3.00	Dark Brown	Silty Clay	Stones	Vegetation
17700163	40A-D24-V	2.40 - 2.40	Grey	Silty Clay	None	None
17700060	40A-E25	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Brick
17700111	40A-E25	1.00 - 1.00	Black	Loamy Sand	Stones	Brick
17700136	40A-E25	1.40 - 1.40	Black	Loamy Sand	Stones	None
17700140	40A-E25	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Vegetation
17700144	40A-E25-V	2.80 - 2.80	Grey	Silty Clay	None	None
17700107	40A-G22	0.40 - 0.40	Dark Brown	Sandy Loam	Stones	None
17700117	40A-G22	1.00 - 1.00	Grey	Sand	Stones	None
17700122	40A-G22	2.00 - 2.00	Dark Brown	Loamy Sand	Crushed Brick	Stones
17700126	40A-G22	3.00 - 3.00	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
17700131	40A-G22-V	3.20 - 3.20	Dark Brown	Sandy Clay	Crushed Brick	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D21	40A-D21	40A-D21	40A-D21	40A-D22	40A-D22
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.40 - 0.40	0.90 - 0.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700087	17700091	17700098	17700102	17700064	17700068
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		1.2	0.6	8.6	16	5.6	7.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	247 #	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 #	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 #	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 #	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 #	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.55		0.298		0.153
Sulphate, Total potential	<0.06 %	TM132			1.65		0.894		0.459
Soil Organic Matter (SOM)	<0.35 %	TM132		7.62 #	8.46 #	1.54 #	3.74 #	1.78 #	4.71 #
pH	1 pH Units	TM133		9.96 M	9.72 M	10.4 #	9.74 #	9.25 M	10.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 #	<1 M	4.83 M
Arsenic	<0.6 mg/kg	TM181		6.87 M	2.68 M	11.8 #	8.58 #	36.2 M	24 M
Cadmium	<0.02 mg/kg	TM181		1.03 M	0.519 M	0.27 #	0.502 #	1.25 M	1.98 M
Chromium	<0.9 mg/kg	TM181		<9 M	5.74 M	46.8 #	18.1 #	<9 M	9.02 M
Copper	<1.4 mg/kg	TM181		83.3 M	8.39 M	<14 #	23.1 #	17.9 M	40.4 M
Iron	<1000 mg/kg	TM181		76300 #	30900 #	56200 #	20400 #	443000 #	340000 #
Lead	<0.7 mg/kg	TM181		75.6 M	46.1 M	15.5 #	33.6 #	60.7 M	187 M
Manganese	<0.13 mg/kg	TM181		1940 M	3660 M	6170 #	3480 #	4530 M	9240 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 #	<0.14 #	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		18.5 M	6.2 M	12.5 #	15.9 #	43.3 M	48.2 M
Selenium	<1 mg/kg	TM181		<10 #	2.71 #	<10 #	3.58 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		43.6 #	32.8 #	132 #	63.3 #	189 #	145 #
Zinc	<1.9 mg/kg	TM181		304 M	193 M	45.6 #	80.6 #	136 M	435 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.962		0.589		0.185
Calcium	<21 mg/kg	TM224			175000		75900		76000
Magnesium	<8 mg/kg	TM224			34600		12100		12300
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.234 M		0.154 #		0.176 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D22	40A-D22	40A-D24	40A-D24	40A-D24	40A-D22-V
			Depth (m)	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700073	17700077	17700149	17700154	17700159	17700082
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	16	9.8	23	23	29
Exchangeable Ammonia as N	<12 mg/kg	TM024		78.4 M	72.7 M	30.2 M	354 M	710 M	1300 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0113 M	<0.01 M	0.0111 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0111 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.0657	0.193		0.0488	
Sulphate, Total potential	<0.06 %	TM132			0.197	0.579		0.146	
Soil Organic Matter (SOM)	<0.35 %	TM132		7.46 #	1.84 #	4.09 #	9.36 #	1.67 #	1.81 #
pH	1 pH Units	TM133		9.3 M	9.8 M	7.7 M	8.43 M	8.66 M	8.18 M
Cyanide, Total	<1 mg/kg	TM153		25.7 M	1.87 M	249 M	140 M	57.4 M	<1 M
Arsenic	<0.6 mg/kg	TM181		18.2 M	22.6 M	9.27 M	9.5 M	12.9 M	17.6 M
Cadmium	<0.02 mg/kg	TM181		3.75 M	1.48 M	0.622 M	0.415 M	0.332 M	6.42 M
Chromium	<0.9 mg/kg	TM181		19.6 M	<9 M	18.3 M	14.4 M	32.3 M	31.2 M
Copper	<1.4 mg/kg	TM181		29 M	22.8 M	16.6 M	28.6 M	<14 M	29.4 M
Iron	<1000 mg/kg	TM181		95100 #	385000 #	60600 #	19700 #	50300 #	49300 #
Lead	<0.7 mg/kg	TM181		78.5 M	75.8 M	59 M	32.5 M	53.7 M	89.5 M
Manganese	<0.13 mg/kg	TM181		3180 M	10600 M	3310 M	409 M	1300 M	390 M
Mercury	<0.14 mg/kg	TM181		2.57 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		34 M	27.9 M	13.6 M	41.8 M	33.6 M	45.2 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	1.94 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		56.5 #	116 #	63.9 #	40.2 #	59.7 #	57.4 #
Zinc	<1.9 mg/kg	TM181		229 M	336 M	139 M	91.5 M	129 M	403 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.063	0.148		0.0396	
Calcium	<21 mg/kg	TM224			65600	101000		27900	
Magnesium	<8 mg/kg	TM224			8920	12000		7930	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0506 M	0.0519 M		0.0779 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D24-V	40A-E25	40A-E25	40A-E25	40A-E25	40A-E25-V
			Depth (m)	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	2.00 - 2.00	2.80 - 2.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700163	17700060	17700111	17700136	17700140	17700144
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		26	8.5	7.2	7.9	12	26
Exchangeable Ammonia as N	<12 mg/kg	TM024		1090 M	<12 M	<12 M	97.3 M	289 M	204 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0108 M	0.0109 M	0.0113 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0109 M	0.158 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.113 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.283 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.263		0.455		
Sulphate, Total potential	<0.06 %	TM132			0.789		1.37		
Soil Organic Matter (SOM)	<0.35 %	TM132		1.17 #	4.6 #	6.1 #	8.15 #	5.28 #	1.53 #
pH	1 pH Units	TM133		8.01 M	11.1 M	10.4 M	8.37 M	7.77 M	8.14 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	3.46 M	21.2 M	40.5 M	10.7 M	<1 M
Arsenic	<0.6 mg/kg	TM181		15.3 M	7.16 M	6.92 M	14.8 M	7.72 M	12.8 M
Cadmium	<0.02 mg/kg	TM181		0.0366 M	2.53 M	1.04 M	1.68 M	0.404 M	0.0661 M
Chromium	<0.9 mg/kg	TM181		25.4 M	472 M	255 M	141 M	8.46 M	30.4 M
Copper	<1.4 mg/kg	TM181		11.7 M	19.5 M	18.5 M	33 M	21.8 M	14.5 M
Iron	<1000 mg/kg	TM181		27900 #	166000 #	105000 #	211000 #	22100 #	27900 #
Lead	<0.7 mg/kg	TM181		28.6 M	124 M	98.4 M	284 M	20.8 M	27.5 M
Manganese	<0.13 mg/kg	TM181		291 M	30900 M	13400 M	14500 M	375 M	351 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<1.4 M	<1.4 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		37 M	14.5 M	9.53 M	17.6 M	24.8 M	38.2 M
Selenium	<1 mg/kg	TM181		<1 #	11.1 #	<10 #	<10 #	1.13 #	<1 #
Vanadium	<0.2 mg/kg	TM181		51.8 #	381 #	233 #	185 #	20.8 #	55 #
Zinc	<1.9 mg/kg	TM181		105 M	252 M	296 M	681 M	53 M	104 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.614		0.207		
Calcium	<21 mg/kg	TM224			218000		145000		
Magnesium	<8 mg/kg	TM224			8150		9440		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.103 M		0.0649 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G22	40A-G22	40A-G22	40A-G22	40A-G22-V
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700107	17700117	17700122	17700126	17700131
			AGS Reference					
Moisture Content Ratio (% of as received sample)	%	PM024		7.3	11	8.8	13	28
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	137 M	29.2 M	305 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0108 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0108 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.169		0.524	
Sulphate, Total potential	<0.06 %	TM132			0.507		1.57	
Soil Organic Matter (SOM)	<0.35 %	TM132		6.05 #	22.2 #	4.17 #	4.05 #	4.22 #
pH	1 pH Units	TM133		10.8 M	9.32 M	8.49 M	9.4 M	7.45 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	1.67 M	1.94 M	<1 M
Arsenic	<0.6 mg/kg	TM181		14.2 M	15.6 M	17.5 M	12.4 M	10.6 M
Cadmium	<0.02 mg/kg	TM181		1.34 M	1.39 M	<0.02 M	1.98 M	0.259 M
Chromium	<0.9 mg/kg	TM181		<9 M	<9 M	10.5 M	<9 M	32.2 M
Copper	<1.4 mg/kg	TM181		17.7 M	18.2 M	32.9 M	46 M	23.5 M
Iron	<1000 mg/kg	TM181		374000 #	298000 #	41500 #	43100 #	31400 #
Lead	<0.7 mg/kg	TM181		47.8 M	35.3 M	22.9 M	92.5 M	27 M
Manganese	<0.13 mg/kg	TM181		3750 M	2430 M	622 M	2490 M	580 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		34 M	34.3 M	46.9 M	20.5 M	36.5 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	1.09 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		112 #	104 #	45 #	35.3 #	50.8 #
Zinc	<1.9 mg/kg	TM181		171 M	114 M	62.9 M	355 M	109 M
Sulphate, acid soluble (total)	<0.02 %	TM221			<0.02		0.575	
Calcium	<21 mg/kg	TM224			18400		82400	
Magnesium	<8 mg/kg	TM224			2380		15700	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0317 M		0.19 M	

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D21	40A-D21	40A-D21	40A-D21	40A-D22	40A-D22
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.40 - 0.40	0.90 - 0.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700087	17700091	17700098	17700102	17700064	17700068
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.4	82	85.5	98.5	91.4	87.2
Acenaphthene-d10 % recovery**	%	TM218		92.4	83.5	88.5	94	90.6	92.8
Phenanthrene-d10 % recovery**	%	TM218		98.4	86.5	91.5	91.6	91.3	95.2
Chrysene-d12 % recovery**	%	TM218		79	71.8	76.5	94.4	78.1	71.8
Perylene-d12 % recovery**	%	TM218		78.3	70	75.3	97	74	70.4
Naphthalene	<0.009 mg/kg	TM218		0.0162 M	<0.09 M	0.039 #	0.0211 #	0.032 M	0.0559 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.12 M	<0.012 #	<0.012 #	<0.012 M	0.0173 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.08 M	<0.008 #	<0.008 #	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0105 M	<0.1 M	0.0147 #	<0.01 #	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.0733 M	<0.15 M	0.135 #	0.048 #	0.0344 M	0.118 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.16 M	0.0353 #	<0.016 #	<0.016 M	0.03 M
Fluoranthene	<0.017 mg/kg	TM218		0.0668 M	0.181 M	0.252 #	0.067 #	0.023 M	0.175 M
Pyrene	<0.015 mg/kg	TM218		0.0713 M	0.179 M	0.19 #	0.0578 #	0.0236 M	0.166 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.037 M	<0.14 M	0.131 #	0.0456 #	<0.014 M	0.106 M
Chrysene	<0.01 mg/kg	TM218		0.0375 M	0.103 M	0.127 #	0.0446 #	0.0155 M	0.113 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0542 M	0.169 M	0.156 #	0.0679 #	0.0227 M	0.141 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0226 M	<0.14 M	0.0668 #	0.024 #	<0.014 M	0.0699 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0394 M	<0.15 M	0.112 #	0.0436 #	<0.015 M	0.119 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0405 M	0.182 M	0.103 #	0.0315 #	<0.018 M	0.166 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.23 M	<0.023 #	<0.023 #	<0.023 M	0.0266 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0502 M	<0.24 M	0.0871 #	0.0322 #	<0.024 M	0.162 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.52	<1.18	1.45	0.483	0.151	1.46

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D22	40A-D22	40A-D24	40A-D24	40A-D24	40A-D22-V
			Depth (m)	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700073	17700077	17700149	17700154	17700159	17700082
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.6	85.9	98.5	91.6	83	89.9
Acenaphthene-d10 % recovery**	%	TM218		83.8	89.9	95.5	93.7	87.3	90.6
Phenanthrene-d10 % recovery**	%	TM218		83.5	90.6	88.4	96.2	93.2	95.1
Chrysene-d12 % recovery**	%	TM218		62.8	71.7	99.4	77.5	76.3	88.5
Perylene-d12 % recovery**	%	TM218		54.4	70.6	99.9	73.2	76.2	91.5
Naphthalene	<0.009 mg/kg	TM218		0.0955 M	0.0942 M	0.163 M	1.45 M	0.187 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.06 M	0.0452 M	0.0183 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0211 M	<0.008 M	<0.04 M	0.0166 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0226 M	<0.01 M	<0.05 M	0.038 M	0.041 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.166 M	0.0442 M	<0.075 M	0.0559 M	0.129 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.0194 M	<0.016 M	<0.08 M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.089 M	0.033 M	<0.085 M	0.0301 M	0.0464 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.0728 M	0.0324 M	<0.075 M	0.0299 M	0.0597 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0389 M	<0.014 M	<0.07 M	<0.014 M	0.0199 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0495 M	0.0175 M	<0.05 M	<0.01 M	0.0168 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0608 M	0.0242 M	<0.075 M	<0.015 M	0.0242 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0177 M	<0.014 M	<0.07 M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0387 M	<0.015 M	<0.075 M	<0.015 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0344 M	<0.018 M	<0.09 M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.115 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0431 M	<0.024 M	<0.12 M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.77	0.245	<0.59	1.67	0.542	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D24-V	40A-E25	40A-E25	40A-E25	40A-E25	40A-E25-V
			Depth (m)	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	2.00 - 2.00	2.80 - 2.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700163	17700060	17700111	17700136	17700140	17700144
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.2	87.8	87.5	32.2	95.1	78
Acenaphthene-d10 % recovery**	%	TM218		87.9	91.7	96.3	31.1	92.8	78.4
Phenanthrene-d10 % recovery**	%	TM218		93.3	98.3	103	29.5	86.9	82.9
Chrysene-d12 % recovery**	%	TM218		77.9	85.8	83.2	25.3	46.1	72.6
Perylene-d12 % recovery**	%	TM218		76.4	85.1	81.8	23.6	26.8	70.5
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.215 M	0.239 M	0.958 M	0.182 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0225 M	0.0527 M	0.0419 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0969 M	0.0498 M	0.0231 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0483 M	0.0519 M	0.043 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	0.768 M	0.54 M	0.177 M	0.0753 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.178 M	0.139 M	0.0896 M	0.0717 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	2.19 M	1.11 M	0.376 M	0.0306 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	2.3 M	1.12 M	0.608 M	0.0301 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	1.42 M	0.732 M	0.241 M	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	1.38 M	0.793 M	0.488 M	0.0212 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	2.15 M	1.35 M	2.18 M	0.0186 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.694 M	0.477 M	0.814 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	1.88 M	1.1 M	1.95 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	1.66 M	1.28 M	1.63 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.282 M	0.191 M	0.257 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	1.48 M	1.2 M	1.49 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	16.8	10.4	11.4	0.43	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G22	40A-G22	40A-G22	40A-G22	40A-G22-V
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700107	17700117	17700122	17700126	17700131
			AGS Reference					
Naphthalene-d8 % recovery**	%	TM218		98.9	89.8	88.1	82.7	90.3
Acenaphthene-d10 % recovery**	%	TM218		92.8	89.3	89	83.4	86.5
Phenanthrene-d10 % recovery**	%	TM218		90.1	84.3	87.9	84.8	85.6
Chrysene-d12 % recovery**	%	TM218		88.6	50.6	71	77.4	81.6
Perylene-d12 % recovery**	%	TM218		81.3	38.4	65.9	72.4	91.5
Naphthalene	<0.009 mg/kg	TM218		0.0399 M	0.0409 M	0.0125 M	0.0163 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0182 M	0.00915 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0152 M	0.0625 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.0626 M	0.347 M	0.0395 M	0.0673 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.0601 M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.0563 M	0.0994 M	<0.017 M	0.0633 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.0626 M	0.105 M	<0.015 M	0.051 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0377 M	0.0642 M	<0.014 M	0.024 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0411 M	0.0738 M	<0.01 M	0.0312 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0446 M	0.0636 M	<0.015 M	0.038 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.019 M	0.0168 M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0264 M	0.0357 M	<0.015 M	0.0173 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0249 M	0.0223 M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0283 M	0.0284 M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.477	1.03	<0.118	0.308	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D21	40A-D21	40A-D21	40A-D21	40A-D22	40A-D22
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.40 - 0.40	0.90 - 0.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700087	17700091	17700098	17700102	17700064	17700068
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		87	50	86	81	110	92
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	5.54	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.121	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.403	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	2.84	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.34	1.68	1.15	92.4	<0.1	3.5
Aliphatics >C16-C21	<0.1 mg/kg	TM173		5.99	15.2	6.31	94.8	<0.1	15
Aliphatics >C21-C35	<0.1 mg/kg	TM173		16.3	261	18.1	38.3	7.02	57.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		3.99	205	5.45	11	1	18.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		28.7	483	31	237	8.03	94.5
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.269	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	1.89	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.86	0.256	11.2	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		4.11	6.56	3.3	21.3	0.362	3.86
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		34.2	239	16.9	25.6	5.76	29.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		30.6	272	8.55	13.8	1.03	17
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		12.8	120	3.28	6.29	<0.1	6.52
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		68.9	519	29	71.9	7.15	50.3
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		97.5	1000	60.1	314	15.2	145

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D22	40A-D22	40A-D24	40A-D24	40A-D24	40A-D22-V
			Depth (m)	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700073	17700077	17700149	17700154	17700159	17700082
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		54	16	55	88	68	112
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	0.613	0.238	0.654	0.247	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	0.0512	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	0.139	<0.04	0.0533	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.168	<0.04	0.287	0.078	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.42	4.69	19.7	2.74	6.16	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		10.2	13.8	34.4	7.37	10.9	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		33.2	20.3	133	19.7	8.96	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		8.91	2.66	72.9	2.75	1.58	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		55.7	41.5	260	32.6	27.6	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.0542	<0.04	0.129	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.0952	<0.04	0.052	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.112	<0.04	0.192	0.052	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.25	<0.1	4.21	2.71	1.24	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		4.51	4.14	22.7	3.98	3.49	1.13
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		18.1	9.19	167	24.4	8.48	3.23
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		7.85	1.88	117	7.14	5.55	6.87
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.05	<0.1	49.7	2.23	2.21	3.75
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		31.7	15.2	311	38.2	18.8	11.2
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		87.4	57.3	571	71.3	46.5	11.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D24-V	40A-E25	40A-E25	40A-E25	40A-E25	40A-E25-V
			Depth (m)	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	2.00 - 2.00	2.80 - 2.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700163	17700060	17700111	17700136	17700140	17700144
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		93	72	70	69	61	94
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	0.274	<0.176	0.453	1.04	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.0842	0.0464	0.0912	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	3.74	5.37	1.77	6.02	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	47.7	24.2	9.4	16.4	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	52.6	84.1	30.7	57	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	12.9	20.8	7.89	9.83	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	117	135	49.7	89.3	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.184	0.826	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0424	0.0565	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.0557	<0.04	0.0608	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.8	2.7	1.95	1.42	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	21.4	14.8	7.63	6.04	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		<0.1	138	93.5	24.8	21.4	1.73
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	39.8	48.8	7.4	2.84	0.675
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	13.8	20.3	2.6	0.283	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		<0.1	201	160	41.7	31.7	2.41
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		<0.1	318	294	91.8	122	2.41

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G22	40A-G22	40A-G22	40A-G22	40A-G22-V
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700107	17700117	17700122	17700126	17700131
			AGS Reference					
GRO Surrogate % recovery**	%	TM089		80	60	50	73	88
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	0.529	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0638	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.226	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.154	0.926	2.64	13.5	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		2.7	4.26	17.6	14.7	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		19.4	15.4	127	156	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		2.48	2.23	49	41.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		24.7	22.8	196	225	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0467	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.15	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.507	1.42	<0.1	3.86	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.32	11.8	3.49	6.46	1.26
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		14.1	23.3	17.2	41.4	9.09
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		4.99	7.21	14.7	16.5	9.74
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		1.85	2.9	6.61	4.27	4.87
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		22.9	43.7	35.4	68.2	20.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		47.7	66.5	232	294	20.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D21	40A-D21	40A-D21	40A-D21	40A-D22	40A-D22
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.40 - 0.40	0.90 - 0.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700087	17700091	17700098	17700102	17700064	17700068
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	105	109	104	105	104
Toluene-d8**	%	TM116		97.3	93.7	98.7	97.2	98.7	96.9
4-Bromofluorobenzene**	%	TM116		93.8	85.7	94.6	94.8	99.6	95.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 #	<0.09 #	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 #	<0.07 #	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 #	<0.04 #	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 #	<0.13 #	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D22	40A-D22	40A-D24	40A-D24	40A-D24	40A-D22-V
			Depth (m)	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700073	17700077	17700149	17700154	17700159	17700082
			AGS Reference						
Dibromofluoromethane**	%	TM116		101	105	110	106	106	103
Toluene-d8**	%	TM116		96.2	98.2	97.4	98.3	97.5	98
4-Bromofluorobenzene**	%	TM116		80	100	92.5	97.4	96	99.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	0.934 M	0.425 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D24-V	40A-E25	40A-E25	40A-E25	40A-E25	40A-E25-V
			Depth (m)	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	2.00 - 2.00	2.80 - 2.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700163	17700060	17700111	17700136	17700140	17700144
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	106	105	105	105	103
Toluene-d8**	%	TM116		99	97.3	96.6	99.3	98.1	97.7
4-Bromofluorobenzene**	%	TM116		98.8	93.2	91.7	97.2	89.4	96.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	0.572 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	0.23 M	0.16 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	0.572	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G22	40A-G22	40A-G22	40A-G22	40A-G22-V
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			SDG Ref	180607-101	180607-101	180607-101	180607-101	180607-101
			Lab Sample No.(s)	17700107	17700117	17700122	17700126	17700131
			AGS Reference					
Dibromofluoromethane**	%	TM116		105	104	108	105	102
Toluene-d8**	%	TM116		98.7	97.2	98.2	97.8	97.9
4-Bromofluorobenzene**	%	TM116		96.9	90	93.7	95.3	96.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-D21 1.00 - 1.00 SOLID 05/06/2018 00:00:00 08/06/2018 11:06:50 180607-101 17700091 TM048	15/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-D21 3.00 - 3.00 SOLID 05/06/2018 00:00:00 08/06/2018 06:47:04 180607-101 17700102 TM048	13/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-D22 0.90 - 0.90 SOLID 05/06/2018 00:00:00 07/06/2018 21:08:34 180607-101 17700068 TM048	14/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-D22 2.50 - 2.50 SOLID 05/06/2018 00:00:00 07/06/2018 21:06:18 180607-101 17700077 TM048	14/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-D24 0.50 - 0.50 SOLID 05/06/2018 00:00:00 08/06/2018 08:46:47 180607-101 17700149 TM048	13/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-D24 2.00 - 2.00 SOLID 05/06/2018 00:00:00 08/06/2018 08:50:12 180607-101 17700159 TM048	13/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180607-101 **Client Reference:** **Report Number:** 460633
Location: Llanwern **Order Number:** LLA442 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-E25 0.50 - 0.50 SOLID 05/06/2018 00:00:00 08/06/2018 07:50:49 180607-101 17700060 TM048	13/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-E25 1.40 - 1.40 SOLID 05/06/2018 00:00:00 07/06/2018 20:59:07 180607-101 17700136 TM048	14/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-G22 1.00 - 1.00 SOLID 05/06/2018 00:00:00 08/06/2018 06:49:39 180607-101 17700117 TM048	13/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-G22 3.00 - 3.00 SOLID 05/06/2018 00:00:00 08/06/2018 06:13:27 180607-101 17700126 TM048	13/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700060
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-E25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.291	<0.2	2.91	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000165	<0.00001	0.000165	<0.0001	-	-	-
Total Cyanide (W)	0.207	<0.05	2.07	<0.5	-	-	-
Arsenic	0.00129	<0.0005	0.0129	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00192	<0.001	0.0192	<0.01	-	-	-
Copper	0.00765	<0.0003	0.0765	<0.003	-	-	-
Lead	0.0044	<0.0002	0.044	<0.002	-	-	-
Manganese	0.0227	<0.003	0.227	<0.03	-	-	-
Nickel	0.000582	<0.0004	0.00582	<0.004	-	-	-
Selenium	0.00269	<0.001	0.0269	<0.01	-	-	-
Vanadium	0.115	<0.001	1.15	<0.01	-	-	-
Zinc	0.0217	<0.001	0.217	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.233	<0.019	2.33	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000171	<0.00001	0.00171	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000379	<0.000005	0.000379	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000674	<0.000005	0.000674	<0.00005	-	-	-
Anthracene by GCMS	0.00000852	<0.000005	0.0000852	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000758	<0.000005	0.000758	<0.00005	-	-	-
Fluorene by GCMS	0.00000929	<0.000005	0.0000929	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0001	<0.000005	0.001	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000471	<0.000082	0.00471	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.93
Conductivity (µS/cm)	350.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700060
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-E25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.93
Conductivity (µS/cm)	350.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.4
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700064
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D22
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.2	<0.2	12	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000548	<0.00001	0.000548	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0158	<0.0005	0.158	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0029	<0.0003	0.029	<0.003	-	-	-
Lead	0.000731	<0.0002	0.00731	<0.002	-	-	-
Manganese	0.00669	<0.003	0.0669	<0.03	-	-	-
Nickel	0.00109	<0.0004	0.0109	<0.004	-	-	-
Selenium	0.0018	<0.001	0.018	<0.01	-	-	-
Vanadium	0.065	<0.001	0.65	<0.01	-	-	-
Zinc	0.00498	<0.001	0.0498	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.107	<0.019	1.07	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000147	<0.00001	0.000147	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000792	<0.000005	0.0000792	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Jun-2018
pH (pH Units)	9.06
Conductivity (µS/cm)	94.90
Temperature (°C)	20.30
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.4
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700064
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D22
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Jun-2018
pH (pH Units)	9.06
Conductivity (µS/cm)	94.90
Temperature (°C)	20.30
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700068
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D22
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.894	<0.2	8.94	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.265	<0.05	2.65	<0.5	-	-	-
Arsenic	0.00426	<0.0005	0.0426	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00256	<0.001	0.0256	<0.01	-	-	-
Copper	0.00558	<0.0003	0.0558	<0.003	-	-	-
Lead	0.0046	<0.0002	0.046	<0.002	-	-	-
Manganese	0.00715	<0.003	0.0715	<0.03	-	-	-
Nickel	0.000484	<0.0004	0.00484	<0.004	-	-	-
Selenium	0.0017	<0.001	0.017	<0.01	-	-	-
Vanadium	0.135	<0.001	1.35	<0.01	-	-	-
Zinc	0.0145	<0.001	0.145	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.12	<0.019	1.2	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000281	<0.00001	0.000281	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000544	<0.000005	0.0000544	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000161	<0.000005	0.000161	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000829	<0.000082	0.000829	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.78
Conductivity (µS/cm)	240.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700068
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D22
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.012	<0.01	0.12	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.041	<0.01	0.41	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.78
Conductivity (µS/cm)	240.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700073
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D22
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.321	<0.2	3.21	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00152	<0.0003	0.0152	<0.003	-	-	-
Lead	0.00147	<0.0002	0.0147	<0.002	-	-	-
Manganese	0.0209	<0.003	0.209	<0.03	-	-	-
Nickel	0.00044	<0.0004	0.0044	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00166	<0.001	0.0166	<0.01	-	-	-
Zinc	0.00207	<0.001	0.0207	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.483	<0.019	4.83	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.36
Conductivity (µS/cm)	11.70
Temperature (°C)	20.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700073
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D22
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.36
Conductivity (µS/cm)	11.70
Temperature (°C)	20.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700077
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D22
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	3.71	<0.2	37.1	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000104	<0.00001	0.000104	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0222	<0.0005	0.222	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00132	<0.001	0.0132	<0.01	-	-	-
Copper	0.00577	<0.0003	0.0577	<0.003	-	-	-
Lead	0.00195	<0.0002	0.0195	<0.002	-	-	-
Manganese	0.00955	<0.003	0.0955	<0.03	-	-	-
Nickel	0.00112	<0.0004	0.0112	<0.004	-	-	-
Selenium	0.0168	<0.001	0.168	<0.01	-	-	-
Vanadium	0.428	<0.001	4.28	<0.01	-	-	-
Zinc	0.00782	<0.001	0.0782	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.207	<0.019	2.07	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000312	<0.00001	0.000312	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000076	<0.000005	0.000076	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000668	<0.000005	0.0000668	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.01
Conductivity (µS/cm)	96.40
Temperature (°C)	20.30
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700077
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D22
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.012	<0.01	0.12	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.01
Conductivity (µS/cm)	96.40
Temperature (°C)	20.30
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	1.21
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.8
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700087
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D21
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.292	<0.2	2.92	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0014	<0.0005	0.014	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000711	<0.0003	0.00711	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00215	<0.001	0.0215	<0.01	-	-	-
Vanadium	0.0339	<0.001	0.339	<0.01	-	-	-
Zinc	0.00219	<0.001	0.0219	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.221	<0.019	2.21	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.80
Conductivity (µS/cm)	90.30
Temperature (°C)	20.50
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	1.21
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.8
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700087
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D21
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.017	<0.01	0.17	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.80
Conductivity (µS/cm)	90.30
Temperature (°C)	20.50
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	0.604
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.4
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700091
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D21
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000133	<0.00001	0.000133	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00074	<0.0005	0.0074	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00146	<0.001	0.0146	<0.01	-	-	-
Copper	0.000949	<0.0003	0.00949	<0.003	-	-	-
Lead	0.00225	<0.0002	0.0225	<0.002	-	-	-
Manganese	0.0153	<0.003	0.153	<0.03	-	-	-
Nickel	0.000465	<0.0004	0.00465	<0.004	-	-	-
Selenium	0.00345	<0.001	0.0345	<0.01	-	-	-
Vanadium	0.0421	<0.001	0.421	<0.01	-	-	-
Zinc	0.00795	<0.001	0.0795	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.12	<0.019	1.2	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000278	<0.000005	0.000278	<0.00005	-	-	-
Anthracene by GCMS	0.00000637	<0.000005	0.0000637	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000186	<0.000005	0.000186	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Pyrene by GCMS	0.0000265	<0.000005	0.000265	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000266	<0.000005	0.000266	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000189	<0.000002	0.000189	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000376	<0.000005	0.000376	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000218	<0.000082	0.00218	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Jun-2018
pH (pH Units)	10.24
Conductivity (µS/cm)	168.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	0.604
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.4
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700091
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D21
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Jun-2018
pH (pH Units)	10.24
Conductivity (µS/cm)	168.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700098
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D21
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00115	<0.0005	0.0115	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000851	<0.0003	0.00851	<0.003	-	-	-
Lead	0.000957	<0.0002	0.00957	<0.002	-	-	-
Manganese	0.0233	<0.003	0.233	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00488	<0.001	0.0488	<0.01	-	-	-
Vanadium	0.1	<0.001	1	<0.01	-	-	-
Zinc	0.00392	<0.001	0.0392	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.987	<0.019	9.87	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000361	<0.00001	0.000361	<0.0001	-	-	-
Acenaphthene by GCMS	0.000141	<0.000005	0.00141	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000265	<0.000005	0.000265	<0.00005	-	-	-
Fluorene by GCMS	0.0000229	<0.000005	0.000229	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000255	<0.000082	0.00255	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Jun-2018
pH (pH Units)	10.57
Conductivity (µS/cm)	260.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700098
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D21
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Jun-2018
pH (pH Units)	10.57
Conductivity (µS/cm)	260.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700102
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D21
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.976	<0.2	9.76	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00371	<0.0005	0.0371	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00155	<0.0003	0.0155	<0.003	-	-	-
Lead	0.00142	<0.0002	0.0142	<0.002	-	-	-
Manganese	0.0313	<0.003	0.313	<0.03	-	-	-
Nickel	0.00102	<0.0004	0.0102	<0.004	-	-	-
Selenium	0.00789	<0.001	0.0789	<0.01	-	-	-
Vanadium	0.0177	<0.001	0.177	<0.01	-	-	-
Zinc	0.00309	<0.001	0.0309	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.187	<0.019	1.87	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000625	<0.00001	0.000625	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000278	<0.000005	0.000278	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000686	<0.000005	0.0000686	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000214	<0.000005	0.000214	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000531	<0.000005	0.000531	<0.00005	-	-	-
Fluorene by GCMS	0.0000296	<0.000005	0.000296	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000218	<0.000082	0.00218	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.092	<0.05	0.92	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.39
Conductivity (µS/cm)	257.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700102
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D21
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.042	<0.01	0.42	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.028	<0.01	0.28	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.092	<0.01	0.92	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.39
Conductivity (µS/cm)	257.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700107
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G22
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.214	<0.2	2.14	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000124	<0.00001	0.000124	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00502	<0.0005	0.0502	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00116	<0.001	0.0116	<0.01	-	-	-
Copper	0.00174	<0.0003	0.0174	<0.003	-	-	-
Lead	0.00085	<0.0002	0.0085	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000594	<0.0004	0.00594	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.166	<0.001	1.66	<0.01	-	-	-
Zinc	0.00195	<0.001	0.0195	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.106	<0.019	1.06	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Jun-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	308.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700107
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G22
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Jun-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	308.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700111
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-E25
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.61	<0.2	16.1	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.833	<0.05	8.33	<0.5	-	-	-
Arsenic	0.00589	<0.0005	0.0589	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00177	<0.001	0.0177	<0.01	-	-	-
Copper	0.00429	<0.0003	0.0429	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000462	<0.0004	0.00462	<0.004	-	-	-
Selenium	0.00484	<0.001	0.0484	<0.01	-	-	-
Vanadium	0.159	<0.001	1.59	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.26	<0.019	2.6	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000467	<0.00001	0.000467	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000641	<0.000005	0.0000641	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000277	<0.000005	0.000277	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Pyrene by GCMS	0.0000275	<0.000005	0.000275	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000206	<0.000005	0.000206	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000709	<0.000005	0.0000709	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000118	<0.000002	0.000118	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000403	<0.000005	0.000403	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000225	<0.000005	0.000225	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000257	<0.000082	0.00257	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.06
Conductivity (µS/cm)	218.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700111
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-E25
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.06
Conductivity (µS/cm)	218.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700117
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G22
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000185	<0.00001	0.000185	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0129	<0.0005	0.129	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0013	<0.0003	0.013	<0.003	-	-	-
Lead	0.00212	<0.0002	0.0212	<0.002	-	-	-
Manganese	0.0159	<0.003	0.159	<0.03	-	-	-
Nickel	0.00048	<0.0004	0.0048	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0462	<0.001	0.462	<0.01	-	-	-
Zinc	0.0032	<0.001	0.032	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.384	<0.019	3.84	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000132	<0.000005	0.000132	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.71
Conductivity (µS/cm)	89.60
Temperature (°C)	20.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700117
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G22
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.71
Conductivity (µS/cm)	89.60
Temperature (°C)	20.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700122
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G22
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	2.22	<0.2	22.2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0108	<0.0005	0.108	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000483	<0.0003	0.00483	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00346	<0.001	0.0346	<0.01	-	-	-
Vanadium	0.0445	<0.001	0.445	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.248	<0.019	2.48	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000552	<0.000005	0.0000552	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Jun-2018
pH (pH Units)	9.37
Conductivity (µS/cm)	96.40
Temperature (°C)	19.80
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700122
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G22
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	11-Jun-2018
pH (pH Units)	9.37
Conductivity (µS/cm)	96.40
Temperature (°C)	19.80
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700126
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G22
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	2.91	<0.2	29.1	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0085	<0.0005	0.085	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00203	<0.0003	0.0203	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00558	<0.003	0.0558	<0.03	-	-	-
Nickel	0.000735	<0.0004	0.00735	<0.004	-	-	-
Selenium	0.00252	<0.001	0.0252	<0.01	-	-	-
Vanadium	0.0357	<0.001	0.357	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000201	<0.00001	0.000201	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000526	<0.000005	0.0000526	<0.00005	-	-	-
Anthracene by GCMS	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.000014	<0.000005	0.00014	<0.00005	-	-	-
Pyrene by GCMS	0.00000672	<0.000005	0.0000672	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000246	<0.000005	0.000246	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000112	<0.000082	0.00112	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.68
Conductivity (µS/cm)	162.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700126
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G22
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.68
Conductivity (µS/cm)	162.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700136
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-E25
Depth (m)	1.40 - 1.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	4.77	<0.2	47.7	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	3.94	<0.05	39.4	<0.5	-	-	-
Arsenic	0.00444	<0.0005	0.0444	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0032	<0.0003	0.032	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0117	<0.003	0.117	<0.03	-	-	-
Nickel	0.00103	<0.0004	0.0103	<0.004	-	-	-
Selenium	0.0186	<0.001	0.186	<0.01	-	-	-
Vanadium	0.0119	<0.001	0.119	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	1.22	<0.019	12.2	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000335	<0.000005	0.000335	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000873	<0.000005	0.0000873	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000179	<0.000005	0.000179	<0.00005	-	-	-
Fluorene by GCMS	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000101	<0.000082	0.00101	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	7.64
Conductivity (µS/cm)	164.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700136
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-E25
Depth (m)	1.40 - 1.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.014	<0.01	0.14	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	7.64
Conductivity (µS/cm)	164.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700140
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-E25
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	17.4	<0.2	174	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000228	<0.00001	0.000228	<0.0001	-	-	-
Total Cyanide (W)	0.058	<0.05	0.58	<0.5	-	-	-
Arsenic	0.0278	<0.0005	0.278	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00155	<0.001	0.0155	<0.01	-	-	-
Copper	0.00594	<0.0003	0.0594	<0.003	-	-	-
Lead	0.00278	<0.0002	0.0278	<0.002	-	-	-
Manganese	0.0112	<0.003	0.112	<0.03	-	-	-
Nickel	0.00198	<0.0004	0.0198	<0.004	-	-	-
Selenium	0.0117	<0.001	0.117	<0.01	-	-	-
Vanadium	0.0678	<0.001	0.678	<0.01	-	-	-
Zinc	0.00516	<0.001	0.0516	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.332	<0.019	3.32	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000139	<0.00001	0.00139	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000139	<0.000082	0.00139	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.07	<0.05	0.7	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Jun-2018
pH (pH Units)	9.11
Conductivity (µS/cm)	131.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700140
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-E25
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.029	<0.01	0.29	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	0.029	<0.007	0.29	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.071	<0.01	0.71	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	0.029	<0.028	0.29	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Jun-2018
pH (pH Units)	9.11
Conductivity (µS/cm)	131.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.2
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700149
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D24
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.398	<0.2	3.98	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	3.6	<0.05	36	<0.5	-	-	-
Arsenic	0.00107	<0.0005	0.0107	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00146	<0.0003	0.0146	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.234	<0.003	2.34	<0.03	-	-	-
Nickel	0.00129	<0.0004	0.0129	<0.004	-	-	-
Selenium	0.00324	<0.001	0.0324	<0.01	-	-	-
Vanadium	0.00948	<0.001	0.0948	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	1.24	<0.019	12.4	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000141	<0.00001	0.00141	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000599	<0.000005	0.0000599	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000876	<0.000005	0.0000876	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0002	<0.000082	0.002	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.12
Conductivity (µS/cm)	194.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.2
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700149
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D24
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.12
Conductivity (µS/cm)	194.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700154
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D24
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	8.56	<0.2	85.6	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.305	<0.05	3.05	<0.5	-	-	-
Arsenic	0.00129	<0.0005	0.0129	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0826	<0.003	0.826	<0.03	-	-	-
Nickel	0.000847	<0.0004	0.00847	<0.004	-	-	-
Selenium	0.004	<0.001	0.04	<0.01	-	-	-
Vanadium	0.00672	<0.001	0.0672	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.121	<0.019	1.21	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00635	<0.00001	0.0635	<0.0001	-	-	-
Acenaphthene by GCMS	0.000173	<0.000005	0.00173	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000215	<0.000005	0.00215	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000436	<0.000005	0.000436	<0.00005	-	-	-
Fluorene by GCMS	0.0000802	<0.000005	0.000802	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00687	<0.000082	0.0687	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.132	<0.05	1.32	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.32
Conductivity (µS/cm)	282.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700154
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D24
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.01	<0.01	0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.056	<0.01	0.56	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.037	<0.01	0.37	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	0.007	<0.007	0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.132	<0.01	1.32	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.32
Conductivity (µS/cm)	282.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700159
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D24
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	29.2	<0.2	292	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.26	<0.05	2.6	<0.5	-	-	-
Arsenic	0.00713	<0.0005	0.0713	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00459	<0.0003	0.0459	<0.003	-	-	-
Lead	0.00157	<0.0002	0.0157	<0.002	-	-	-
Manganese	0.0203	<0.003	0.203	<0.03	-	-	-
Nickel	0.00436	<0.0004	0.0436	<0.004	-	-	-
Selenium	0.00634	<0.001	0.0634	<0.01	-	-	-
Vanadium	0.0124	<0.001	0.124	<0.01	-	-	-
Zinc	0.0484	<0.001	0.484	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.456	<0.019	4.56	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000933	<0.00001	0.000933	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000242	<0.000005	0.000242	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000332	<0.000005	0.000332	<0.00005	-	-	-
Anthracene by GCMS	0.00000708	<0.000005	0.0000708	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000431	<0.000005	0.000431	<0.00005	-	-	-
Fluorene by GCMS	0.0000359	<0.000005	0.000359	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000289	<0.000005	0.000289	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000281	<0.000082	0.00281	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.87
Conductivity (µS/cm)	328.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	180607-101
Lab Sample Number(s)	17700159
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-D24
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.87
Conductivity (µS/cm)	328.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	17700087	17700091	17700098	17700102	17700064	17700068	17700073	17700077	17700149	17700154
Customer Sample Ref.	40A-D21	40A-D21	40A-D21	40A-D21	40A-D22	40A-D22	40A-D22	40A-D22	40A-D24	40A-D24
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.40 - 0.40	0.90 - 0.90	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		15-Jun-2018		15-Jun-2018		15-Jun-2018		15-Jun-2018	15-Jun-2018	
Ammoniacal Nitrogen	18-Jun-2018	18-Jun-2018	18-Jun-2018	13-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	13-Jun-2018	18-Jun-2018
Ammonium Soil by Titration	13-Jun-2018	14-Jun-2018	13-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018
Anions by Kone (soil)		15-Jun-2018		14-Jun-2018		13-Jun-2018		13-Jun-2018	15-Jun-2018	
Asbestos ID in Solid Samples		15-Jun-2018		13-Jun-2018		14-Jun-2018		14-Jun-2018	13-Jun-2018	
CEN 10:1 Leachate (1 Stage)	09-Jun-2018	11-Jun-2018	11-Jun-2018	09-Jun-2018	08-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018
CEN Readings	11-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018
Dissolved Metals by ICP-MS	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	15-Jun-2018	15-Jun-2018	16-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018
EPH CWG (Aliphatic) GC (S)	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	15-Jun-2018	15-Jun-2018	16-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018
EPH CWG (Aromatic) GC (S)	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018
GRO by GC-FID (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
GRO by GC-FID (W)	13-Jun-2018	14-Jun-2018	14-Jun-2018	18-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	15-Jun-2018	14-Jun-2018	18-Jun-2018
Mercury Dissolved	12-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	12-Jun-2018	13-Jun-2018
Metals in solid samples by OES	12-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018
PAH by GCMS	11-Jun-2018	11-Jun-2018	11-Jun-2018	15-Jun-2018	11-Jun-2018	11-Jun-2018	18-Jun-2018	11-Jun-2018	15-Jun-2018	11-Jun-2018
PAH Spec MS - Aqueous (W)	14-Jun-2018	14-Jun-2018	15-Jun-2018	13-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018
pH	18-Jun-2018	17-Jun-2018	15-Jun-2018	17-Jun-2018	14-Jun-2018	17-Jun-2018	13-Jun-2018	17-Jun-2018	17-Jun-2018	13-Jun-2018
pH Value	13-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	13-Jun-2018
Phenols by HPLC (S)	11-Jun-2018	11-Jun-2018	13-Jun-2018	11-Jun-2018	11-Jun-2018	13-Jun-2018	11-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018
Sample description	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	07-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Total Organic Carbon	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	12-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	11-Jun-2018
Total Sulphate		18-Jun-2018		14-Jun-2018		14-Jun-2018		14-Jun-2018	14-Jun-2018	
Total Sulphur		13-Jun-2018		14-Jun-2018		14-Jun-2018		14-Jun-2018	14-Jun-2018	
TPH CWG (W)	15-Jun-2018	15-Jun-2018	16-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018
TPH CWG GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
VOC MS (S)	13-Jun-2018	13-Jun-2018	13-Jun-2018	11-Jun-2018	13-Jun-2018	11-Jun-2018	13-Jun-2018	11-Jun-2018	11-Jun-2018	13-Jun-2018

Lab Sample No(s)	17700159	17700082	17700163	17700060	17700111	17700136	17700140	17700144	17700107	17700117
Customer Sample Ref.	40A-D24	40A-D22-V	40A-D24-V	40A-E25	40A-E25	40A-E25	40A-E25	40A-E25-V	40A-G22	40A-G22
AGS Ref.										
Depth	2.00 - 2.00	3.00 - 3.00	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	2.00 - 2.00	2.80 - 2.80	0.40 - 0.40	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	15-Jun-2018			15-Jun-2018		15-Jun-2018				15-Jun-2018
Ammoniacal Nitrogen	18-Jun-2018			18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018		18-Jun-2018	13-Jun-2018
Ammonium Soil by Titration	13-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018
Anions by Kone (soil)	18-Jun-2018			15-Jun-2018		15-Jun-2018				15-Jun-2018
Asbestos ID in Solid Samples	13-Jun-2018			13-Jun-2018		14-Jun-2018				13-Jun-2018
CEN 10:1 Leachate (1 Stage)	09-Jun-2018			09-Jun-2018	09-Jun-2018	09-Jun-2018	08-Jun-2018		11-Jun-2018	09-Jun-2018
CEN Readings	12-Jun-2018			11-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018		13-Jun-2018	12-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	15-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018	14-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018	14-Jun-2018
Dissolved Metals by ICP-MS	18-Jun-2018			18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018		18-Jun-2018	18-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	15-Jun-2018			15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018		15-Jun-2018	15-Jun-2018
EPH CWG (Aliphatic) GC (S)	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	15-Jun-2018			15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018		15-Jun-2018	15-Jun-2018
EPH CWG (Aromatic) GC (S)	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018
GRO by GC-FID (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
GRO by GC-FID (W)	14-Jun-2018			13-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018		14-Jun-2018	18-Jun-2018
Mercury Dissolved	13-Jun-2018			18-Jun-2018	18-Jun-2018	12-Jun-2018	18-Jun-2018		14-Jun-2018	13-Jun-2018
Metals in solid samples by OES	13-Jun-2018	13-Jun-2018	12-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018
PAH by GCMS	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	12-Jun-2018	18-Jun-2018	11-Jun-2018	15-Jun-2018	18-Jun-2018
PAH Spec MS - Aqueous (W)	13-Jun-2018			14-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018		14-Jun-2018	13-Jun-2018
pH	14-Jun-2018	14-Jun-2018	13-Jun-2018	17-Jun-2018	17-Jun-2018	17-Jun-2018	14-Jun-2018	13-Jun-2018	15-Jun-2018	14-Jun-2018
pH Value	13-Jun-2018			14-Jun-2018	13-Jun-2018	14-Jun-2018	14-Jun-2018		13-Jun-2018	13-Jun-2018
Phenols by HPLC (S)	13-Jun-2018	11-Jun-2018	12-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	11-Jun-2018	12-Jun-2018	12-Jun-2018
Sample description	08-Jun-2018	07-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	07-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Total Organic Carbon	15-Jun-2018	12-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	12-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018
Total Sulphate	14-Jun-2018			12-Jun-2018		14-Jun-2018				14-Jun-2018
Total Sulphur	14-Jun-2018			13-Jun-2018		13-Jun-2018				13-Jun-2018
TPH CWG (W)	15-Jun-2018			15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018		15-Jun-2018	18-Jun-2018
TPH CWG GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
VOC MS (S)	11-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	11-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	11-Jun-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180607-101	**Client Reference:**		**Report Number:**	460633
Location:	Llanwern	**Order Number:**	LLA442	**Superseded Report:**	

Lab Sample No(s)	17700122	17700126	17700131
Customer Sample Ref.	40A-G22	40A-G22	40A-G22-V
AGS Ref.			
Depth	2.00 - 2.00	3.00 - 3.00	3.20 - 3.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		15-Jun-2018	
Ammoniacal Nitrogen	18-Jun-2018	13-Jun-2018	
Ammonium Soil by Titration	14-Jun-2018	13-Jun-2018	13-Jun-2018
Anions by Kone (soil)		15-Jun-2018	
Asbestos ID in Solid Samples		13-Jun-2018	
CEN 10:1 Leachate (1 Stage)	11-Jun-2018	09-Jun-2018	
CEN Readings	12-Jun-2018	12-Jun-2018	
Cyanide Comp/Free/Total/Thiocyanate	15-Jun-2018	14-Jun-2018	14-Jun-2018
Dissolved Metals by ICP-MS	18-Jun-2018	18-Jun-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	16-Jun-2018	15-Jun-2018	
EPH CWG (Aliphatic) GC (S)	12-Jun-2018	13-Jun-2018	12-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	16-Jun-2018	15-Jun-2018	
EPH CWG (Aromatic) GC (S)	12-Jun-2018	13-Jun-2018	12-Jun-2018
GRO by GC-FID (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018
GRO by GC-FID (W)	16-Jun-2018	18-Jun-2018	
Mercury Dissolved	14-Jun-2018	13-Jun-2018	
Metals in solid samples by OES	13-Jun-2018	13-Jun-2018	13-Jun-2018
PAH by GCMS	14-Jun-2018	13-Jun-2018	11-Jun-2018
PAH Spec MS - Aqueous (W)	15-Jun-2018	13-Jun-2018	
pH	18-Jun-2018	14-Jun-2018	18-Jun-2018
pH Value	14-Jun-2018	13-Jun-2018	
Phenols by HPLC (S)	11-Jun-2018	13-Jun-2018	11-Jun-2018
Sample description	08-Jun-2018	08-Jun-2018	08-Jun-2018
Total Organic Carbon	15-Jun-2018	15-Jun-2018	15-Jun-2018
Total Sulphate		14-Jun-2018	
Total Sulphur		14-Jun-2018	
TPH CWG (W)	16-Jun-2018	18-Jun-2018	
TPH CWG GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018
VOC MS (S)	11-Jun-2018	11-Jun-2018	13-Jun-2018

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

General

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
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SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	25 June 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180608-17
Your Reference:	
Location:	Llanwern
Report No:	461660

We received 41 samples on Friday June 08, 2018 and 41 of these samples were scheduled for analysis which was completed on Friday June 22, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17701568	40A-G25		0.50 - 0.50	05/06/2018
17701633	40A-G25		1.20 - 1.20	05/06/2018
17701703	40A-G25		2.00 - 2.00	05/06/2018
17701802	40A-G25		3.00 - 3.00	05/06/2018
17701826	40A-G25-V		3.10 - 3.10	05/06/2018
17701830	40A-L20		0.50 - 0.50	05/06/2018
17701838	40A-L20		1.00 - 1.00	05/06/2018
17701844	40A-L20		2.50 - 2.50	05/06/2018
17701850	40A-L20-V		3.50 - 3.50	05/06/2018
17701606	40A-N24		0.50 - 0.50	06/06/2018
17701612	40A-N24		1.00 - 1.00	06/06/2018
17701617	40A-N24		1.70 - 1.70	06/06/2018
17701621	40A-N24		2.30 - 2.30	06/06/2018
17701575	40A-N26		0.50 - 0.50	06/06/2018
17701582	40A-N26		1.00 - 1.00	06/06/2018
17701588	40A-N26		1.70 - 1.70	06/06/2018
17701595	40A-N26		2.30 - 2.30	06/06/2018
17701601	40A-N26-V		2.60 - 2.60	06/06/2018
17701627	40A-O23		0.50 - 0.50	06/06/2018
17701637	40A-O23		1.00 - 1.00	06/06/2018
17701642	40A-O23		1.30 - 1.30	06/06/2018
17701646	40A-O25		0.50 - 0.50	06/06/2018
17701651	40A-O25		1.00 - 1.00	06/06/2018
17701657	40A-O25		2.00 - 2.00	06/06/2018
17701662	40A-O25		2.80 - 2.80	06/06/2018
17701667	40A-O25-V		3.00 - 3.00	06/06/2018
17701676	40A-Q24		0.50 - 0.50	06/06/2018
17701691	40A-Q24		1.00 - 1.00	06/06/2018
17701698	40A-Q24		2.00 - 2.00	06/06/2018
17701719	40A-Q27		0.20 - 0.20	06/06/2018
17701727	40A-Q27		0.70 - 0.70	06/06/2018
17701735	40A-Q27		1.20 - 1.20	06/06/2018
17701744	40A-Q27		1.90 - 1.90	06/06/2018
17701711	40A-Q24-V		2.10 - 2.10	06/06/2018
17701753	40A-Q27-V		2.00 - 2.00	06/06/2018
17701761	40A-R25		0.50 - 0.50	06/06/2018
17701771	40A-R25		1.00 - 1.00	06/06/2018
17701781	40A-R25-V		1.30 - 1.30	06/06/2018
17701792	40A-S27		0.20 - 0.20	06/06/2018
17701812	40A-S27		0.70 - 0.70	06/06/2018
17701818	40A-S27-V		0.80 - 0.80	06/06/2018

Maximum Sample/Coolbox Temperature (°C) :

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

13.4

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17701568			17701633			17701703			17701802			17701826			17701830			17701838
Customer Sample Reference			40A-G25			40A-G25			40A-G25			40A-G25			40A-G25-V			40A-L20			40A-L20
AGS Reference																					
Depth (m)			0.50 - 0.50			1.20 - 1.20			2.00 - 2.00			3.00 - 3.00			3.10 - 3.10			0.50 - 0.50			1.00 - 1.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 17		X						X									X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 33	X			X			X			X					X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41		X			X			X			X		X			X				X
Anions by Kone (soil)	All	NDPs: 0 Tests: 17		X						X								X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 17	X						X								X					
CEN Readings	All	NDPs: 0 Tests: 33	X			X			X			X					X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 74	X	X		X	X		X	X		X	X		X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 33	X			X			X			X					X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33	X			X			X			X					X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 41		X			X			X			X		X			X				X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33	X			X			X			X					X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 41		X			X			X			X		X			X				X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41			X			X			X			X		X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 33	X			X			X			X					X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 33	X			X			X			X					X			X		

17701575	40A-N26		0.50 - 0.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X
17701621	40A-N24		2.30 - 2.30	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X
17701617	40A-N24		1.70 - 1.70	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X
17701612	40A-N24		1.00 - 1.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X
17701606	40A-N24		0.50 - 0.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X
17701850	40A-L20-V		3.50 - 3.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
17701844	40A-L20		2.50 - 2.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X
17701838	40A-L20		1.00 - 1.00	60g VOC (ALE215)	S																X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | | |

17701575	40A-N26		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X				
				1kg TUB	S			X		X								X			
17701621	40A-N24		2.30 - 2.30	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X				
				1kg TUB	S			X		X								X			
17701617	40A-N24		1.70 - 1.70	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X				
				1kg TUB	S			X		X								X			
17701612	40A-N24		1.00 - 1.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X				
				1kg TUB	S			X		X								X			
17701606	40A-N24		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X				
				1kg TUB	S			X		X								X			
17701850	40A-L20-V		3.50 - 3.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X				
17701844	40A-L20		2.50 - 2.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X				
				1kg TUB	S			X		X								X			
17701838	40A-L20		1.00 - 1.00	60g VOC (ALE215)	S																X

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17701582			17701588			17701595			17701601			17701627			17701637			17701642	
Customer Sample Reference			40A-N26			40A-N26			40A-N26			40A-N26-V			40A-O23			40A-O23			40A-O23	
AGS Reference																						
Depth (m)			1.00 - 1.00			1.70 - 1.70			2.30 - 2.30			2.60 - 2.60			0.50 - 0.50			1.00 - 1.00			1.30 - 1.30	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 17		X						X								X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 33	X			X			X					X			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41		X			X			X		X			X			X				X
Anions by Kone (soil)	All	NDPs: 0 Tests: 17		X						X								X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 17	X						X								X					
CEN Readings	All	NDPs: 0 Tests: 33	X			X			X					X			X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 74	X	X		X	X		X	X		X		X	X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 33	X			X			X					X			X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33	X			X			X					X			X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 41		X			X			X		X			X			X				X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33	X			X			X					X			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 41		X			X			X		X			X			X				X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41			X			X			X		X			X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 33	X			X			X					X			X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 33	X			X			X					X			X			X		

17701691	40A-Q24		1.00 - 1.00	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X	
17701676	40A-Q24		0.50 - 0.50	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X	
17701667	40A-O25-V		3.00 - 3.00	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
17701662	40A-O25		2.80 - 2.80	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X	
17701657	40A-O25		2.00 - 2.00	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X	
17701651	40A-O25		1.00 - 1.00	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X	
17701646	40A-O25		0.50 - 0.50	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X	
17701642	40A-O23		1.30 - 1.30	60g VOC (ALE215)	S															X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17701582			17701588			17701595			17701601		17701627			17701637			17701642
Customer Sample Reference			40A-N26			40A-N26			40A-N26			40A-N26-V		40A-O23			40A-O23			40A-O23
AGS Reference																				
Depth (m)			1.00 - 1.00			1.70 - 1.70			2.30 - 2.30			2.60 - 2.60		0.50 - 0.50			1.00 - 1.00			1.30 - 1.30
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 41		X			X			X		X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 41		X			X			X		X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 33	X			X			X					X			X			X	
pH	All	NDPs: 0 Tests: 41		X			X			X		X			X			X			X
pH Value	All	NDPs: 0 Tests: 33	X			X			X					X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41		X			X			X		X			X			X			X
Sample description	All	NDPs: 0 Tests: 41		X			X			X		X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 41		X			X			X		X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 17		X						X								X			
Total Sulphur	All	NDPs: 0 Tests: 17		X						X								X			
TPH CWG (W)	All	NDPs: 0 Tests: 33	X			X			X					X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 41		X			X			X		X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 41			X			X			X		X			X			X		

17701691	40A-Q24		1.00 - 1.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
				1kg TUB	S			X		X							X			
17701676	40A-Q24		0.50 - 0.50	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X		
				1kg TUB	S			X		X							X			
17701667	40A-O25-V		3.00 - 3.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
17701662	40A-O25		2.80 - 2.80	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
				1kg TUB	S			X		X							X			
17701657	40A-O25		2.00 - 2.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X		
				1kg TUB	S			X		X							X			
17701651	40A-O25		1.00 - 1.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
				1kg TUB	S			X		X							X			
17701646	40A-O25		0.50 - 0.50	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X		
				1kg TUB	S			X		X							X			
17701642	40A-O23		1.30 - 1.30	60g VOC (ALE215)	S															X

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

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17701818	40A-S27-V		0.80 - 0.80	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S			X				X			X		X						
17701812	40A-S27		0.70 - 0.70	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X	X		
17701792	40A-S27		0.20 - 0.20	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S			X				X			X		X						
				1kg TUB	S		X				X	X	X	X		X				X	X		
17701781	40A-R25-V		1.30 - 1.30	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S			X				X			X		X						
17701771	40A-R25		1.00 - 1.00	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X	X		
17701761	40A-R25		0.50 - 0.50	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S			X				X			X		X						
				1kg TUB	S		X				X	X	X	X		X				X	X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | | |

17701818	40A-S27-V		0.80 - 0.80	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
17701812	40A-S27		0.70 - 0.70	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X		
				1kg TUB	S			X		X						X			
17701792	40A-S27		0.20 - 0.20	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
				1kg TUB	S			X		X						X			
17701781	40A-R25-V		1.30 - 1.30	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
17701771	40A-R25		1.00 - 1.00	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X		
				1kg TUB	S			X		X						X			
17701761	40A-R25		0.50 - 0.50	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
				1kg TUB	S			X		X						X			

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17701568	40A-G25	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17701633	40A-G25	1.20 - 1.20	Dark Brown	Loamy Sand	Stones	Vegetation
17701703	40A-G25	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
17701802	40A-G25	3.00 - 3.00	Dark Brown	Sandy Loam	Stones	N/A
17701826	40A-G25-V	3.10 - 3.10	Dark Brown	Silty Clay Loam	Stones	Vegetation
17701830	40A-L20	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17701838	40A-L20	1.00 - 1.00	Dark Brown	Sand	Stones	N/A
17701844	40A-L20	2.50 - 2.50	Dark Brown	Sandy Loam	Stones	Brick
17701850	40A-L20-V	3.50 - 3.50	Dark Brown	Silty Clay Loam	Stones	Vegetation
17701606	40A-N24	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
17701612	40A-N24	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
17701617	40A-N24	1.70 - 1.70	Dark Brown	Loamy Sand	Stones	Vegetation
17701621	40A-N24	2.30 - 2.30	Dark Brown	Sandy Loam	Stones	Vegetation
17701575	40A-N26	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Brick
17701582	40A-N26	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Brick
17701588	40A-N26	1.70 - 1.70	Dark Brown	Loamy Sand	Stones	Brick
17701595	40A-N26	2.30 - 2.30	Dark Brown	Sandy Loam	Vegetation	Stones
17701601	40A-N26-V	2.60 - 2.60	Grey	Clay	None	None
17701627	40A-O23	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17701637	40A-O23	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Brick
17701642	40A-O23	1.30 - 1.30	Dark Brown	Sandy Loam	Stones	Brick
17701646	40A-O25	0.50 - 0.50	Dark Brown	Sand	Stones	None
17701651	40A-O25	1.00 - 1.00	Dark Brown	Silt Loam	Stones	None
17701657	40A-O25	2.00 - 2.00	Dark Brown	Silt Loam	Stones	None
17701662	40A-O25	2.80 - 2.80	Dark Brown	Loamy Sand	Stones	None
17701667	40A-O25-V	3.00 - 3.00	Grey	Silt Loam	Vegetation	None
17701676	40A-Q24	0.50 - 0.50	Grey	Loamy Sand	Stones	None
17701691	40A-Q24	1.00 - 1.00	Grey	Loamy Sand	Stones	None
17701698	40A-Q24	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	None
17701719	40A-Q27	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
17701727	40A-Q27	0.70 - 0.70	Dark Brown	Sandy Loam	Stones	None
17701735	40A-Q27	1.20 - 1.20	Dark Brown	Sandy Loam	Stones	None
17701744	40A-Q27	1.90 - 1.90	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
17701711	40A-Q24-V	2.10 - 2.10	Grey	Silt Loam	None	None
17701753	40A-Q27-V	2.00 - 2.00	Grey	Silty Clay	None	None
17701761	40A-R25	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
17701771	40A-R25	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
17701781	40A-R25-V	1.30 - 1.30	Grey	Silty Clay	Stones	None

			Colour	Description	Inclusions	Inclusions 2
17701792	40A-S27	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
17701812	40A-S27	0.70 - 0.70	Dark Brown	Sandy Loam	Stones	Vegetation
17701818	40A-S27-V	0.80 - 0.80	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G25	40A-G25	40A-G25	40A-G25	40A-G25-V	40A-L20
			Depth (m)	0.50 - 0.50	1.20 - 1.20	2.00 - 2.00	3.00 - 3.00	3.10 - 3.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701568	17701633	17701703	17701802	17701826	17701830
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6	21	6.9	12	31	4.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	86 M	440 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.617		0.581			0.22
Sulphate, Total potential	<0.06 %	TM132		1.85		1.74			0.66
Soil Organic Matter (SOM)	<0.35 %	TM132		4.86 #	48.6 #	8.33 #	8.33 #	3.52 #	3.07 #
pH	1 pH Units	TM133		9.61 M	8.14 M	10.8 M	8.7 M	7.36 M	9.02 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.48 M	5.59 M	1.85 M	6.65 M	11 M	2.45 M
Cadmium	<0.02 mg/kg	TM181		0.553 M	0.296 M	0.345 M	0.315 M	0.382 M	0.449 M
Chromium	<0.9 mg/kg	TM181		41.2 M	17.9 M	92 M	12.6 M	34.9 M	12.5 M
Copper	<1.4 mg/kg	TM181		15.4 M	31.4 M	9.14 M	25.2 M	25 M	8.2 M
Iron	<1000 mg/kg	TM181		24400 #	22900 #	38000 #	22400 #	31100 #	35400 #
Lead	<0.7 mg/kg	TM181		54.9 M	39.8 M	16.8 M	31.1 M	37 M	28.6 M
Manganese	<0.13 mg/kg	TM181		4560 M	1220 M	11800 M	1680 M	506 M	3310 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		10.9 M	27.1 M	6.33 M	23.5 M	31.6 M	6.74 M
Selenium	<1 mg/kg	TM181		3.46 #	1.59 #	6.91 #	1.8 #	1.22 #	2.79 #
Vanadium	<0.2 mg/kg	TM181		43 #	98.2 #	125 #	37.2 #	54.5 #	38.3 #
Zinc	<1.9 mg/kg	TM181		163 M	66.4 M	74.7 M	100 M	129 M	114 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.398		0.79			0.33
Calcium	<21 mg/kg	TM224		163000		176000			243000
Magnesium	<8 mg/kg	TM224		30200		27400			19100
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.138 M		0.153 M			0.0872 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L20	40A-L20	40A-L20-V	40A-N24	40A-N24	40A-N24
			Depth (m)	1.00 - 1.00	2.50 - 2.50	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701838	17701844	17701850	17701606	17701612	17701617
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	8.4	45	0.82	4.9	7.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	379 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0182 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0182 M	<0.01 M	0.0105 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.152			0.133	
Sulphate, Total potential	<0.06 %	TM132			0.456			0.399	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.57 #	3.69 #	12.5 #	1.78 #	1.39 #	1.1 #
pH	1 pH Units	TM133		8.74 M	8.35 M	6.59 M	9.03 M	8.89 M	10.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		16 M	11 M	22.3 M	5.13 M	8.26 M	3.84 M
Cadmium	<0.02 mg/kg	TM181		0.417 M	0.377 M	0.931 M	1.58 M	1.48 M	0.282 M
Chromium	<0.9 mg/kg	TM181		18.5 M	16.6 M	36.3 M	23.9 M	31.8 M	33.5 M
Copper	<1.4 mg/kg	TM181		30.5 M	24.8 M	31 M	27.4 M	43.3 M	6.56 M
Iron	<1000 mg/kg	TM181		33300 #	31500 #	20800 #	41700 #	26200 #	14400 #
Lead	<0.7 mg/kg	TM181		23.3 M	29.5 M	67 M	78.7 M	113 M	12.2 M
Manganese	<0.13 mg/kg	TM181		940 M	1990 M	272 M	3330 M	2980 M	4350 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		41.4 M	34 M	27.8 M	12.6 M	20.3 M	4.99 M
Selenium	<1 mg/kg	TM181		1.36 #	2.06 #	1.42 #	1.94 #	1.43 #	4.02 #
Vanadium	<0.2 mg/kg	TM181		44 #	35.4 #	56.9 #	53.2 #	56.9 #	84.9 #
Zinc	<1.9 mg/kg	TM181		104 M	106 M	176 M	268 M	298 M	50.1 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.211			0.0892	
Calcium	<21 mg/kg	TM224			50500			265000	
Magnesium	<8 mg/kg	TM224			7960			26700	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0562 M			0.0732 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N24	40A-N26	40A-N26	40A-N26	40A-N26	40A-N26-V
			Depth (m)	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	2.60 - 2.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701621	17701575	17701582	17701588	17701595	17701601
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		1.9	7.1	3.9	6.5	1.6	17
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	124 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.141		0.0364		0.179	
Sulphate, Total potential	<0.06 %	TM132		0.423		0.109		0.537	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.42 #	2.71 #	1.76 #	5 #	3.03 #	1.1 #
pH	1 pH Units	TM133		8.6 M	8.12 M	8.96 M	8.3 M	9.04 M	7.35 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.4 M	9.54 M	5.14 M	8.59 M	7.14 M	9.36 M
Cadmium	<0.02 mg/kg	TM181		0.943 M	0.673 M	0.194 M	0.383 M	0.92 M	0.239 M
Chromium	<0.9 mg/kg	TM181		19.5 M	44.7 M	11.1 M	9.15 M	80 M	30.6 M
Copper	<1.4 mg/kg	TM181		14.1 M	24.9 M	8.61 M	12 M	32.3 M	11.9 M
Iron	<1000 mg/kg	TM181		24300 #	46700 #	16300 #	20400 #	63100 #	30300 #
Lead	<0.7 mg/kg	TM181		59.9 M	42.4 M	11.7 M	16.2 M	67.6 M	28 M
Manganese	<0.13 mg/kg	TM181		3350 M	4100 M	742 M	519 M	8260 M	414 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		11 M	25.7 M	17.6 M	33.4 M	17.9 M	38.7 M
Selenium	<1 mg/kg	TM181		3.31 #	2.52 #	<1 #	<1 #	3.29 #	<1 #
Vanadium	<0.2 mg/kg	TM181		46 #	80.6 #	17.4 #	20.9 #	168 #	51.8 #
Zinc	<1.9 mg/kg	TM181		86.5 M	131 M	48.2 M	103 M	202 M	111 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.357		0.0329		0.227	
Calcium	<21 mg/kg	TM224		165000		74400		138000	
Magnesium	<8 mg/kg	TM224		35500		32600		31100	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.24 M		0.0147 M		0.0872 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O23	40A-O23	40A-O23	40A-O25	40A-O25	40A-O25
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701627	17701637	17701642	17701646	17701651	17701657
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.2	9.3	6	6.3	6	7.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.23		0.229		0.458
Sulphate, Total potential	<0.06 %	TM132			0.69		0.687		1.37
Soil Organic Matter (SOM)	<0.35 %	TM132		2.26 #	4.45 #	2.17 #	1.48 #	0.952 #	1.09 #
pH	1 pH Units	TM133		11.5 M	12 M	11 M	11.8 M	12 M	11.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.75 M	7.04 M	5.34 M	<6 M	6.22 M	<6 M
Cadmium	<0.02 mg/kg	TM181		1.62 M	1.5 M	1.33 M	0.796 M	0.88 M	0.743 M
Chromium	<0.9 mg/kg	TM181		29.4 M	31.8 M	82.5 M	292 M	273 M	155 M
Copper	<1.4 mg/kg	TM181		20.1 M	50.9 M	19.7 M	<14 M	40.2 M	21.5 M
Iron	<1000 mg/kg	TM181		36400 #	43700 #	22600 #	144000 #	148000 #	98900 #
Lead	<0.7 mg/kg	TM181		93.2 M	120 M	66 M	42.7 M	55 M	59.7 M
Manganese	<0.13 mg/kg	TM181		4720 M	4710 M	6990 M	21900 M	28100 M	15900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		10.7 M	15.1 M	14 M	7.67 M	11.4 M	18.7 M
Selenium	<1 mg/kg	TM181		3.16 #	3.24 #	2.74 #	<10 #	10.4 #	<10 #
Vanadium	<0.2 mg/kg	TM181		77.1 #	55.6 #	108 #	486 #	537 #	297 #
Zinc	<1.9 mg/kg	TM181		253 M	320 M	179 M	149 M	113 M	134 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.385		0.36		0.726
Calcium	<21 mg/kg	TM224			161000		198000		207000
Magnesium	<8 mg/kg	TM224			36300		36200		28600
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.144 M		0.0933 M		0.0651 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O25	40A-O25-V	40A-Q24	40A-Q24	40A-Q24	40A-Q27
			Depth (m)	2.80 - 2.80	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701662	17701667	17701676	17701691	17701698	17701719
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	43	12	14	12	8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	287 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.3		0.571	
Sulphate, Total potential	<0.06 %	TM132				0.9		1.71	
Soil Organic Matter (SOM)	<0.35 %	TM132		0.705 #	10.8 #	2.43 #	1.47 #	6.36 #	1.6 #
pH	1 pH Units	TM133		11.4 M	7.59 M	11 M	11.1 M	10.2 M	10.3 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		3.35 M	20.9 M	5.97 M	5.37 M	8.15 M	9.48 M
Cadmium	<0.02 mg/kg	TM181		0.447 M	0.74 M	0.448 M	0.573 M	0.547 M	0.732 M
Chromium	<0.9 mg/kg	TM181		49.2 M	33.8 M	283 M	155 M	162 M	266 M
Copper	<1.4 mg/kg	TM181		37.5 M	25.8 M	17.8 M	17.6 M	30.2 M	18.5 M
Iron	<1000 mg/kg	TM181		37500 #	18600 #	53300 #	66100 #	91600 #	160000 #
Lead	<0.7 mg/kg	TM181		39.2 M	50.3 M	47 M	34.5 M	67.7 M	45.7 M
Manganese	<0.13 mg/kg	TM181		6650 M	356 M	19300 M	15600 M	18200 M	25300 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		8.43 M	27.6 M	12.4 M	10.3 M	12.4 M	18.4 M
Selenium	<1 mg/kg	TM181		4.13 #	1.29 #	7.35 #	6.13 #	6.97 #	<10 #
Vanadium	<0.2 mg/kg	TM181		141 #	53.6 #	248 #	276 #	237 #	444 #
Zinc	<1.9 mg/kg	TM181		100 M	154 M	238 M	171 M	416 M	131 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.444		0.346	
Calcium	<21 mg/kg	TM224				161000		188000	
Magnesium	<8 mg/kg	TM224				16800		21500	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.192 M		0.153 M	

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-Q27	40A-Q27	40A-Q27	40A-Q24-V	40A-Q27-V	40A-R25
			Depth (m)	0.70 - 0.70	1.20 - 1.20	1.90 - 1.90	2.10 - 2.10	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701727	17701735	17701744	17701711	17701753	17701761
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8	8.9	5.3	26	24	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	72 M	184 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0264 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.193		0.184			
Sulphate, Total potential	<0.06 %	TM132		0.579		0.552			
Soil Organic Matter (SOM)	<0.35 %	TM132		<0.35 #	<0.35 #	<0.35 #	1.68 #	1.41 #	1.57 #
pH	1 pH Units	TM133		12.6 M	12.7 M	12.7 M	8.05 M	8.53 M	11.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	6.7 M	<6 M	9.48 M	12.8 M	8.82 M
Cadmium	<0.02 mg/kg	TM181		0.657 M	0.401 M	0.443 M	0.251 M	0.208 M	0.804 M
Chromium	<0.9 mg/kg	TM181		416 M	466 M	468 M	43.8 M	32.8 M	124 M
Copper	<1.4 mg/kg	TM181		14.9 M	<14 M	<14 M	15.2 M	13.6 M	49.8 M
Iron	<1000 mg/kg	TM181		177000 #	214000 #	226000 #	32300 #	30600 #	91300 #
Lead	<0.7 mg/kg	TM181		14.4 M	16.1 M	19.2 M	30.4 M	25.6 M	61.2 M
Manganese	<0.13 mg/kg	TM181		37600 M	39000 M	14.2 M	763 M	697 M	8530 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		5.34 M	2.99 M	<2 M	39.7 M	40.3 M	21.4 M
Selenium	<1 mg/kg	TM181		12.4 #	14.2 #	13.7 #	1.26 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		965 #	929 #	1020 #	72.2 #	57.8 #	183 #
Zinc	<1.9 mg/kg	TM181		36.2 M	24 M	33.9 M	116 M	104 M	116 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.276		0.261			
Calcium	<21 mg/kg	TM224		252000		255000			
Magnesium	<8 mg/kg	TM224		6760		7470			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0546 M		<0.004 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R25	40A-R25-V	40A-S27	40A-S27	40A-S27-V
			Depth (m)	1.00 - 1.00	1.30 - 1.30	0.20 - 0.20	0.70 - 0.70	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701771	17701781	17701792	17701812	17701818
			AGS Reference					
Moisture Content Ratio (% of as received sample)	%	PM024		13	25	17	12	29
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	57.7 M	31.6 M	<12 M	235 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.458			0.545	
Sulphate, Total potential	<0.06 %	TM132		1.37			1.64	
Soil Organic Matter (SOM)	<0.35 %	TM132		0.872 #	1.17 #	1.81 #	1.95 #	3.65 #
pH	1 pH Units	TM133		11.3 M	8.07 M	11.1 M	9.77 M	7.54 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.74 M	9.82 M	2.74 M	3.67 M	12.3 M
Cadmium	<0.02 mg/kg	TM181		0.242 M	0.245 M	0.253 M	0.263 M	0.509 M
Chromium	<0.9 mg/kg	TM181		52.3 M	31.7 M	105 M	50.1 M	26.3 M
Copper	<1.4 mg/kg	TM181		21.2 M	12.7 M	8.66 M	12.9 M	21.3 M
Iron	<1000 mg/kg	TM181		84900 #	34900 #	30100 #	28600 #	28000 #
Lead	<0.7 mg/kg	TM181		17.9 M	28.4 M	11.7 M	14.8 M	36.3 M
Manganese	<0.13 mg/kg	TM181		11600 M	739 M	7980 M	6120 M	735 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		8.1 M	37.7 M	7.21 M	10.9 M	29 M
Selenium	<1 mg/kg	TM181		4.75 #	1.13 #	5.06 #	4.38 #	1.02 #
Vanadium	<0.2 mg/kg	TM181		137 #	56.5 #	199 #	171 #	45.3 #
Zinc	<1.9 mg/kg	TM181		46.7 M	108 M	41 M	54.9 M	154 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.595			0.605	
Calcium	<21 mg/kg	TM224		161000			170000	
Magnesium	<8 mg/kg	TM224		12900			24700	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.17 M			0.246 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G25	40A-G25	40A-G25	40A-G25	40A-G25-V	40A-L20
			Depth (m)	0.50 - 0.50	1.20 - 1.20	2.00 - 2.00	3.00 - 3.00	3.10 - 3.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701568	17701633	17701703	17701802	17701826	17701830
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.6	68.3	94.9	72.4	91.1	91.6
Acenaphthene-d10 % recovery**	%	TM218		94.4	72.5	95.1	77.7	87.9	94.5
Phenanthrene-d10 % recovery**	%	TM218		94.9	60.9	96.6	74.1	91.7	95.3
Chrysene-d12 % recovery**	%	TM218		80.1	45.1	95.9	70	98	85.1
Perylene-d12 % recovery**	%	TM218		75.1	32.2	91.4	66	107	83.2
Naphthalene	<0.009 mg/kg	TM218		0.0747 M	0.0304 M	0.0579 M	0.0428 M	<0.009 M	0.0359 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0313 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	0.0188 M
Acenaphthene	<0.008 mg/kg	TM218		0.0308 M	<0.008 M	0.03 M	0.0124 M	<0.008 M	0.0121 M
Fluorene	<0.01 mg/kg	TM218		0.0414 M	0.0163 M	0.0333 M	0.0145 M	<0.01 M	0.0197 M
Phenanthrene	<0.015 mg/kg	TM218		0.274 M	0.0877 M	0.191 M	0.0733 M	<0.015 M	0.607 M
Anthracene	<0.016 mg/kg	TM218		0.0686 M	<0.016 M	0.0327 M	<0.016 M	<0.016 M	0.129 M
Fluoranthene	<0.017 mg/kg	TM218		0.407 M	0.0508 M	0.198 M	0.0553 M	<0.017 M	1.85 M
Pyrene	<0.015 mg/kg	TM218		0.375 M	0.0474 M	0.204 M	0.048 M	<0.015 M	1.41 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.225 M	0.0272 M	0.137 M	0.0343 M	<0.014 M	0.648 M
Chrysene	<0.01 mg/kg	TM218		0.256 M	0.0564 M	0.188 M	0.0569 M	<0.01 M	0.679 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.31 M	0.0485 M	0.234 M	0.0579 M	<0.015 M	0.574 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.135 M	<0.014 M	0.0835 M	0.0203 M	<0.014 M	0.292 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.252 M	0.0224 M	0.151 M	0.0303 M	<0.015 M	0.559 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.179 M	<0.018 M	0.139 M	0.0262 M	<0.018 M	0.317 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.045 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	0.084 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.205 M	<0.024 M	0.122 M	0.0275 M	<0.024 M	0.378 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2.91	0.387	1.8	0.5	<0.118	7.61

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L20	40A-L20	40A-L20-V	40A-N24	40A-N24	40A-N24
			Depth (m)	1.00 - 1.00	2.50 - 2.50	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701838	17701844	17701850	17701606	17701612	17701617
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.9	92.3	92.6	88.4	91.2	90.5
Acenaphthene-d10 % recovery**	%	TM218		93.3	84.7	94.7	94	95.3	92.3
Phenanthrene-d10 % recovery**	%	TM218		93	81.4	95.9	91.3	97.1	93
Chrysene-d12 % recovery**	%	TM218		79.9	73.7	90.4	81.2	80.4	82.2
Perylene-d12 % recovery**	%	TM218		74.1	73.3	86.3	80.9	81.1	79.3
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.0287 M	<0.009 M	<0.045 M	<0.045 M	0.0208 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.06 M	<0.06 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	0.024 M	<0.04 M	<0.04 M	0.0209 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.0634 M	<0.05 M	<0.05 M	0.102 M
Phenanthrene	<0.015 mg/kg	TM218		0.0286 M	0.121 M	0.197 M	0.184 M	0.0879 M	0.236 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.0313 M	0.149 M	<0.08 M	0.0374 M
Fluoranthene	<0.017 mg/kg	TM218		0.0469 M	0.0658 M	0.402 M	0.313 M	0.15 M	0.434 M
Pyrene	<0.015 mg/kg	TM218		0.0411 M	0.0515 M	0.335 M	0.308 M	0.195 M	0.434 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0268 M	0.0384 M	0.146 M	0.194 M	<0.07 M	0.181 M
Chrysene	<0.01 mg/kg	TM218		0.0273 M	0.0664 M	0.185 M	0.249 M	0.0754 M	0.19 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0332 M	0.0616 M	0.215 M	0.305 M	0.109 M	0.135 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.0186 M	0.0778 M	0.126 M	<0.07 M	0.0652 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0232 M	0.0359 M	0.15 M	0.188 M	0.0996 M	0.105 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.024 M	0.0962 M	0.169 M	0.0987 M	0.0495 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.115 M	<0.115 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	0.107 M	0.231 M	0.155 M	0.0635 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.227	0.512	2.03	2.42	0.97	2.07

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N24	40A-N26	40A-N26	40A-N26	40A-N26	40A-N26-V
			Depth (m)	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	2.60 - 2.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701621	17701575	17701582	17701588	17701595	17701601
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.7	85.1	94	92	85.9	92.8
Acenaphthene-d10 % recovery**	%	TM218		104	88.4	91.5	92.6	86.3	88.8
Phenanthrene-d10 % recovery**	%	TM218		102	92.3	91.8	94.4	84.1	89.5
Chrysene-d12 % recovery**	%	TM218		109	82.5	96.2	77.1	86.1	91.4
Perylene-d12 % recovery**	%	TM218		113	82.8	96.4	71.6	82.9	94
Naphthalene	<0.009 mg/kg	TM218		0.0225 M	0.0179 M	0.0262 M	0.0311 M	<0.045 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.06 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0357 M	<0.008 M	<0.008 M	<0.008 M	<0.04 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.153 M	<0.01 M	<0.01 M	<0.01 M	<0.05 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.296 M	0.0841 M	0.105 M	0.168 M	0.258 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.03 M	0.0209 M	0.0172 M	<0.016 M	<0.08 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.132 M	0.117 M	0.118 M	0.0757 M	0.585 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.166 M	0.107 M	0.115 M	0.0759 M	0.59 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0549 M	0.0615 M	0.0826 M	0.0412 M	0.434 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0614 M	0.0678 M	0.108 M	0.093 M	0.512 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0868 M	0.105 M	0.173 M	0.0793 M	0.828 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0296 M	0.0359 M	0.0571 M	0.0222 M	0.284 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0463 M	0.0634 M	0.0959 M	0.0342 M	0.446 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0508 M	0.0498 M	0.11 M	0.0283 M	0.386 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.115 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.128 M	0.0673 M	0.106 M	0.0427 M	0.353 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.29	0.797	1.11	0.692	4.68	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O23	40A-O23	40A-O23	40A-O25	40A-O25	40A-O25
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701627	17701637	17701642	17701646	17701651	17701657
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.3	85.1	88.8	92.2	92.8	93.6
Acenaphthene-d10 % recovery**	%	TM218		89.6	86.6	89.5	93.1	94.6	91.5
Phenanthrene-d10 % recovery**	%	TM218		90.7	88.7	86.8	93.7	95.7	92.9
Chrysene-d12 % recovery**	%	TM218		82.6	85.3	91.4	84.5	86.5	84.1
Perylene-d12 % recovery**	%	TM218		81.8	85	91.6	86	88	78.6
Naphthalene	<0.009 mg/kg	TM218		0.0472 M	0.0235 M	0.0374 M	<0.045 M	0.0183 M	0.0534 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	0.0197 M	<0.06 M	<0.012 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		0.0113 M	<0.008 M	0.0232 M	<0.04 M	0.0193 M	0.0555 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.0139 M	<0.05 M	<0.01 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		0.172 M	0.124 M	0.762 M	0.207 M	0.349 M	0.621 M
Anthracene	<0.016 mg/kg	TM218		0.0349 M	0.0282 M	0.11 M	<0.08 M	0.0508 M	0.112 M
Fluoranthene	<0.017 mg/kg	TM218		0.302 M	0.183 M	1.91 M	0.564 M	1 M	1.39 M
Pyrene	<0.015 mg/kg	TM218		0.299 M	0.17 M	1.44 M	0.516 M	0.921 M	1.46 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.163 M	0.116 M	0.726 M	0.23 M	0.466 M	0.662 M
Chrysene	<0.01 mg/kg	TM218		0.193 M	0.16 M	0.934 M	0.319 M	0.625 M	0.816 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.31 M	0.237 M	0.908 M	0.408 M	0.894 M	1.27 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0953 M	0.102 M	0.442 M	0.137 M	0.312 M	0.369 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.193 M	0.122 M	0.412 M	0.179 M	0.531 M	0.748 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.157 M	0.129 M	0.388 M	0.179 M	0.341 M	0.535 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0317 M	0.0266 M	0.0784 M	<0.115 M	0.0735 M	<0.115 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.202 M	0.142 M	0.369 M	0.228 M	0.487 M	0.711 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2.21	1.56	8.58	2.97	6.09	8.81

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O25	40A-O25-V	40A-Q24	40A-Q24	40A-Q24	40A-Q27
			Depth (m)	2.80 - 2.80	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701662	17701667	17701676	17701691	17701698	17701719
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97.2	95.6	88.3	92.4	91.4	88.2
Acenaphthene-d10 % recovery**	%	TM218		93	88.6	86.3	90.8	89.3	89.3
Phenanthrene-d10 % recovery**	%	TM218		92.6	91.9	92	93.1	91.5	92.2
Chrysene-d12 % recovery**	%	TM218		96.7	92.3	91.5	88.4	86.7	95.3
Perylene-d12 % recovery**	%	TM218		95.3	91.8	92.5	93.9	91.1	97.2
Naphthalene	<0.009 mg/kg	TM218		0.0365 M	<0.009 M	0.0249 M	0.0326 M	0.0444 M	0.0165 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	0.0133 M
Acenaphthene	<0.008 mg/kg	TM218		0.0198 M	<0.008 M	0.0108 M	<0.008 M	0.0126 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0195 M	<0.01 M	0.0115 M	<0.01 M	0.015 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.152 M	0.0715 M	0.122 M	0.0659 M	0.217 M	0.282 M
Anthracene	<0.016 mg/kg	TM218		0.0288 M	<0.016 M	0.0643 M	<0.016 M	0.1 M	0.0516 M
Fluoranthene	<0.017 mg/kg	TM218		0.239 M	0.108 M	1.18 M	0.131 M	0.422 M	0.68 M
Pyrene	<0.015 mg/kg	TM218		0.21 M	0.0862 M	1.42 M	0.282 M	0.6 M	0.618 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.101 M	0.0444 M	0.545 M	0.108 M	0.342 M	0.422 M
Chrysene	<0.01 mg/kg	TM218		0.133 M	0.0724 M	0.477 M	0.13 M	0.36 M	0.482 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.183 M	0.111 M	0.377 M	0.133 M	0.453 M	0.628 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0504 M	0.0292 M	0.202 M	0.0571 M	0.246 M	0.294 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0786 M	0.046 M	0.34 M	0.0776 M	0.329 M	0.31 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0658 M	0.051 M	0.188 M	0.0623 M	0.237 M	0.302 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	0.0462 M	<0.023 M	0.0557 M	0.0602 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0611 M	<0.024 M	0.215 M	0.0694 M	0.28 M	0.291 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.38	0.619	5.22	1.15	3.71	4.45

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-Q27	40A-Q27	40A-Q27	40A-Q24-V	40A-Q27-V	40A-R25
			Depth (m)	0.70 - 0.70	1.20 - 1.20	1.90 - 1.90	2.10 - 2.10	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701727	17701735	17701744	17701711	17701753	17701761
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.1	90.3	89.8	90.4	87.5	88.2
Acenaphthene-d10 % recovery**	%	TM218		88.1	94.8	93.5	86.6	57.4	95
Phenanthrene-d10 % recovery**	%	TM218		84.5	99.2	98.2	89.4	94.3	98.2
Chrysene-d12 % recovery**	%	TM218		89.3	94.7	90	89.3	93.1	90.2
Perylene-d12 % recovery**	%	TM218		93.1	90.5	84.7	95.4	88.6	85.1
Naphthalene	<0.009 mg/kg	TM218		0.0142 M	0.049 M	<0.009 M	0.0174 M	0.0197 M	0.0974 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0352 M	0.0782 M	<0.008 M	0.0149 M	<0.008 M	0.138 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0138 M	<0.01 M	<0.01 M	<0.01 M	0.0798 M
Phenanthrene	<0.015 mg/kg	TM218		0.525 M	0.471 M	0.229 M	0.143 M	<0.015 M	0.832 M
Anthracene	<0.016 mg/kg	TM218		0.0457 M	0.154 M	<0.016 M	0.029 M	<0.016 M	0.225 M
Fluoranthene	<0.017 mg/kg	TM218		0.83 M	1.07 M	0.18 M	0.174 M	<0.017 M	1.57 M
Pyrene	<0.015 mg/kg	TM218		0.742 M	0.883 M	0.144 M	0.179 M	<0.015 M	1.7 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.387 M	0.322 M	0.0547 M	0.0639 M	<0.014 M	0.913 M
Chrysene	<0.01 mg/kg	TM218		0.441 M	0.283 M	0.0628 M	0.0704 M	<0.01 M	0.944 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.416 M	0.267 M	0.086 M	0.0865 M	<0.015 M	1.24 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.178 M	0.111 M	0.0277 M	0.0289 M	<0.014 M	0.42 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.178 M	0.161 M	0.0509 M	0.0557 M	<0.015 M	0.88 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.187 M	0.117 M	0.0426 M	0.038 M	<0.018 M	0.566 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.038 M	0.0281 M	<0.023 M	<0.023 M	<0.023 M	0.116 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.163 M	0.11 M	0.0482 M	0.0502 M	<0.024 M	0.619 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		4.18	4.12	0.926	0.951	<0.118	10.3

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R25	40A-R25-V	40A-S27	40A-S27	40A-S27-V
			Depth (m)	1.00 - 1.00	1.30 - 1.30	0.20 - 0.20	0.70 - 0.70	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701771	17701781	17701792	17701812	17701818
			AGS Reference					
Naphthalene-d8 % recovery**	%	TM218		89.7	87.7	92.1	92.2	100
Acenaphthene-d10 % recovery**	%	TM218		92.2	90.4	89.8	42.4	88.5
Phenanthrene-d10 % recovery**	%	TM218		97.2	94.6	91.3	97.7	92.8
Chrysene-d12 % recovery**	%	TM218		86.8	92.4	96.9	93.6	94.8
Perylene-d12 % recovery**	%	TM218		89.8	87.6	95.1	88.3	93.7
Naphthalene	<0.009 mg/kg	TM218		0.143 M	0.0232 M	<0.009 M	0.011 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.223 M	0.0232 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.126 M	0.0145 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		1.21 M	0.135 M	0.0581 M	0.0648 M	0.0233 M
Anthracene	<0.016 mg/kg	TM218		0.269 M	0.0304 M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		2.16 M	0.201 M	0.0918 M	0.12 M	0.0411 M
Pyrene	<0.015 mg/kg	TM218		2.01 M	0.178 M	0.0797 M	0.0943 M	0.0329 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.07 M	0.112 M	0.0561 M	0.0719 M	0.0212 M
Chrysene	<0.01 mg/kg	TM218		1 M	0.124 M	0.0562 M	0.0754 M	0.0285 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.97 M	0.155 M	0.101 M	0.111 M	0.0456 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.438 M	0.0473 M	0.0344 M	0.0344 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.2 M	0.106 M	0.0565 M	0.0673 M	0.0213 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.611 M	0.0657 M	0.0517 M	0.0554 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.156 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.719 M	0.0736 M	0.0441 M	0.0538 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		12.3	1.29	0.63	0.759	0.214

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G25	40A-G25	40A-G25	40A-G25	40A-G25-V	40A-L20
			Depth (m)	0.50 - 0.50	1.20 - 1.20	2.00 - 2.00	3.00 - 3.00	3.10 - 3.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701568	17701633	17701703	17701802	17701826	17701830
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		79	47	77	49	93	84
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.561	2.33	2.6	2.39	<0.1	4.72
Aliphatics >C16-C21	<0.1 mg/kg	TM173		8.48	9.7	13.9	6.2	<0.1	19.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		46.8	61.3	60.8	21.4	1.25	143
Aliphatics >C35-C44	<0.1 mg/kg	TM173		6.79	20.9	13.9	7.01	<0.1	41.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		62.6	94.2	91.3	37	1.25	208
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.057	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.61	0.875	1.09	<0.1	<0.1	2.83
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.06	3.87	4.77	<0.1	<0.1	11.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		38.4	26.7	26.7	0.978	0.112	65.6
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		20.3	13.9	10.9	<0.1	0.549	37.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		8.11	5.29	3.9	<0.1	<0.1	15.4
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		69.3	45.3	43.5	0.978	0.661	118
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		132	140	135	38.1	1.91	326

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L20	40A-L20	40A-L20-V	40A-N24	40A-N24	40A-N24
			Depth (m)	1.00 - 1.00	2.50 - 2.50	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701838	17701844	17701850	17701606	17701612	17701617
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		106	83	85	90	81	90
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	2.56
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	0.0728	<0.04	<0.04	0.343
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	0.0455	<0.04	<0.04	1.16
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.32	5.8	<0.1	20	19	43.5
Aliphatics >C16-C21	<0.1 mg/kg	TM173		2.54	6.8	<0.1	62.1	116	100
Aliphatics >C21-C35	<0.1 mg/kg	TM173		8.97	6.89	2.02	216	577	86.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.87	1.7	<0.1	62.3	178	23
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		14.7	21.2	2.02	360	890	253
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	0.0491	<0.04	<0.04	0.229
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.776
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	0.98	2.49	3.85	4.74	15.8
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	3.36	2.38	21.5	49.3	35.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		2.54	7.36	37.3	97.2	242	39.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		5.7	6.44	4.16	73.3	115	26.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.21	3.4	0.521	32.4	47.5	12.6
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		8.24	18.1	46.3	196	412	117
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		22.9	39.3	48.5	556	1300	372

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N24	40A-N26	40A-N26	40A-N26	40A-N26	40A-N26-V
			Depth (m)	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	2.60 - 2.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701621	17701575	17701582	17701588	17701595	17701601
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89	87	89	80	84	101
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		5.45	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.54	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		2.7	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		107	35	1.81	3.06	3.43	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		233	41.1	9.98	5.38	16.3	0.157
Aliphatics >C21-C35	<0.1 mg/kg	TM173		257	50.6	60.6	21.5	118	1.02
Aliphatics >C35-C44	<0.1 mg/kg	TM173		55.8	10	42.8	2.58	30.7	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		652	137	115	32.6	168	1.18
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.36	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		1.8	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		41.4	5.29	0.687	1.7	1.09	1.66
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		108	17.4	4.27	6.82	6.41	1.59
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		102	34.9	48	17.4	54.8	3.74
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		28.7	15.7	62.8	2.96	31	0.636
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		9.87	6.29	30.7	<0.1	13.2	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		280	73.3	116	28.9	93.3	7.63
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		938	210	231	61.4	261	8.82

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O23	40A-O23	40A-O23	40A-O25	40A-O25	40A-O25
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701627	17701637	17701642	17701646	17701651	17701657
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97	108	86	89	97	83
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.044	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		4.14	4.7	2.4	87.9	1.19	7.85
Aliphatics >C16-C21	<0.1 mg/kg	TM173		16.7	17.9	8.71	279	20.8	32.5
Aliphatics >C21-C35	<0.1 mg/kg	TM173		62.8	79.5	34.7	859	166	199
Aliphatics >C35-C44	<0.1 mg/kg	TM173		22.3	47.9	9.45	145	42	58.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		106	150	55.3	1370	230	297
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.31	<0.1	1.81	8.1	1.41	1.22
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		5.19	<0.1	5.32	48.8	10.3	10.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		31.6	3.69	26.3	192	82.3	103
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		17.4	7.58	13.6	115	42	76
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		6.93	3.38	5.43	47.9	16.1	29.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		55.5	11.3	47.1	365	136	190
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		162	161	102	1740	366	488

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O25	40A-O25-V	40A-Q24	40A-Q24	40A-Q24	40A-Q27
			Depth (m)	2.80 - 2.80	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701662	17701667	17701676	17701691	17701698	17701719
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		96	83	93	86	96	109
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		0.484	<0.176	<0.176	0.235	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0515	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.196	0.049	<0.04	0.0644	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.17	0.854	8.26	8.23	5.08	0.407
Aliphatics >C16-C21	<0.1 mg/kg	TM173		6.64	<0.1	20.8	25.6	17.1	4.81
Aliphatics >C21-C35	<0.1 mg/kg	TM173		10.3	6	134	231	146	69
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.4	<0.1	32.2	50.5	35.9	29.8
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		23.5	6.85	196	315	204	104
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.13	<0.04	<0.04	0.0433	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.25	0.277	1.5	2.36	1.07	0.558
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.94	0.996	10.7	18	7.21	5.47
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		5.48	30.2	46.2	92.2	57.9	61.9
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.87	3.24	16.3	49.1	29.9	45.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	6.42	18.9	12.3	17.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		12.5	34.7	74.7	162	96.2	114
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		36.4	41.6	270	477	300	218

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-Q27	40A-Q27	40A-Q27	40A-Q24-V	40A-Q27-V	40A-R25
			Depth (m)	0.70 - 0.70	1.20 - 1.20	1.90 - 1.90	2.10 - 2.10	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701727	17701735	17701744	17701711	17701753	17701761
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		108	104	106	104	127	95
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	0.447
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0472
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.189
Aliphatics >C12-C16	<0.1 mg/kg	TM173		10.7	4.53	1.27	<0.1	0.166	39.5
Aliphatics >C16-C21	<0.1 mg/kg	TM173		20.9	13.9	3.01	0.335	<0.1	96.7
Aliphatics >C21-C35	<0.1 mg/kg	TM173		67.1	63.8	29.4	7.84	0.449	325
Aliphatics >C35-C44	<0.1 mg/kg	TM173		13.7	9.08	13.8	0.63	<0.1	87.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		112	91.3	47.4	8.81	0.615	549
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.125
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.56	0.814	1.21	0.602	<0.1	23.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		5.76	1.36	26.6	2.74	1.17	59.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	0.565	23.2	0.41	0.834	8.16
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	9.38	<0.1	0.21	1.76
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		9.32	2.74	51	3.75	2.01	91
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		122	94	98.4	12.6	2.62	641

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R25	40A-R25-V	40A-S27	40A-S27	40A-S27-V
			Depth (m)	1.00 - 1.00	1.30 - 1.30	0.20 - 0.20	0.70 - 0.70	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701771	17701781	17701792	17701812	17701818
			AGS Reference					
GRO Surrogate % recovery**	%	TM089		127	102	109	87	109
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		15.3	1.46	1.12	0.793	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		42.2	3.33	2.28	1.53	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		200	17.4	15.6	7.8	3.34
Aliphatics >C35-C44	<0.1 mg/kg	TM173		27.1	1.65	3.05	0.813	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		284	23.8	22	10.9	3.34
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		4.11	0.402	0.461	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		18.9	2.52	2.04	<0.1	1.28
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		60.5	11.2	15.3	4.59	17.8
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		15.3	1.95	4.34	1.07	3.21
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		5.63	<0.1	1.33	0.123	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		98.8	16	22.1	5.66	22.3
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		383	39.9	44.2	16.6	25.6

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G25	40A-G25	40A-G25	40A-G25	40A-G25-V	40A-L20
			Depth (m)	0.50 - 0.50	1.20 - 1.20	2.00 - 2.00	3.00 - 3.00	3.10 - 3.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701568	17701633	17701703	17701802	17701826	17701830
			AGS Reference						
Dibromofluoromethane**	%	TM116		110	108	108	110	104	107
Toluene-d8**	%	TM116		96.1	92.7	95.5	92	96.8	97.1
4-Bromofluorobenzene**	%	TM116		90.4	74	89.9	75.2	96.7	91.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L20	40A-L20	40A-L20-V	40A-N24	40A-N24	40A-N24
			Depth (m)	1.00 - 1.00	2.50 - 2.50	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701838	17701844	17701850	17701606	17701612	17701617
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	108	107	107	114	114
Toluene-d8**	%	TM116		98.2	95.5	95.2	95.3	96.2	97.2
4-Bromofluorobenzene**	%	TM116		95.5	86	94	92.6	91	94.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N24	40A-N26	40A-N26	40A-N26	40A-N26	40A-N26-V
			Depth (m)	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	2.60 - 2.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701621	17701575	17701582	17701588	17701595	17701601
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	121	105	110	109	112
Toluene-d8**	%	TM116		95.4	97.6	98	95.7	96.4	97.9
4-Bromofluorobenzene**	%	TM116		87.1	96.3	83.9	84.8	89	95.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O23	40A-O23	40A-O23	40A-O25	40A-O25	40A-O25
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701627	17701637	17701642	17701646	17701651	17701657
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	104	111	109	108	103
Toluene-d8**	%	TM116		97.2	98.2	96.8	95.7	93.2	95.5
4-Bromofluorobenzene**	%	TM116		95.1	93.6	94.1	91.4	92.2	94.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O25	40A-O25-V	40A-Q24	40A-Q24	40A-Q24	40A-Q27
			Depth (m)	2.80 - 2.80	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701662	17701667	17701676	17701691	17701698	17701719
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	110	105	105	109	109
Toluene-d8**	%	TM116		97	94.7	96.9	98.2	97.7	97.2
4-Bromofluorobenzene**	%	TM116		93.4	90.6	94.6	98.8	95	95.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.147 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-Q27	40A-Q27	40A-Q27	40A-Q24-V	40A-Q27-V	40A-R25
			Depth (m)	0.70 - 0.70	1.20 - 1.20	1.90 - 1.90	2.10 - 2.10	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701727	17701735	17701744	17701711	17701753	17701761
			AGS Reference						
Dibromofluoromethane**	%	TM116		98.9	99.6	8.9	103	108	123
Toluene-d8**	%	TM116		97.9	97.8	94.9	97.2	97.7	97.6
4-Bromofluorobenzene**	%	TM116		97	97.5	98.7	98.9	97.2	95
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R25	40A-R25-V	40A-S27	40A-S27	40A-S27-V
			Depth (m)	1.00 - 1.00	1.30 - 1.30	0.20 - 0.20	0.70 - 0.70	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701771	17701781	17701792	17701812	17701818
			AGS Reference					
Dibromofluoromethane**	%	TM116		106	110	109	138	104
Toluene-d8**	%	TM116		97.1	96.8	97.6	98.7	97.3
4-Bromofluorobenzene**	%	TM116		96.2	96.5	96.2	103	95.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-G25 0.50 - 0.50 SOLID 05/06/2018 00:00:00 08/06/2018 15:42:24 180608-17 17701568 TM048	18/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-G25 2.00 - 2.00 SOLID 05/06/2018 00:00:00 08/06/2018 15:40:21 180608-17 17701703 TM048	18/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-L20 0.50 - 0.50 SOLID 05/06/2018 00:00:00 08/06/2018 13:34:59 180608-17 17701830 TM048	18/06/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-L20 2.50 - 2.50 SOLID 05/06/2018 00:00:00 08/06/2018 13:33:24 180608-17 17701844 TM048	18/06/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-N24 1.00 - 1.00 SOLID 06/06/2018 00:00:00 08/06/2018 15:33:00 180608-17 17701612 TM048	18/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-N24 2.30 - 2.30 SOLID 06/06/2018 00:00:00 08/06/2018 13:53:21 180608-17 17701621 TM048	18/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180608-17 **Client Reference:** **Report Number:** 461660
Location: Llanwern **Order Number:** LLA443 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-N26 1.00 - 1.00 SOLID 06/06/2018 00:00:00 08/06/2018 14:04:06 180608-17 17701582 TM048	18/06/2018	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-N26 2.30 - 2.30 SOLID 06/06/2018 00:00:00 08/06/2018 13:50:38 180608-17 17701595 TM048	18/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-O23 1.00 - 1.00 SOLID 06/06/2018 00:00:00 08/06/2018 14:02:33 180608-17 17701637 TM048	18/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-O25 0.50 - 0.50 SOLID 06/06/2018 00:00:00 08/06/2018 15:26:24 180608-17 17701646 TM048	15/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-O25 2.00 - 2.00 SOLID 06/06/2018 00:00:00 08/06/2018 16:14:55 180608-17 17701657 TM048	15/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-Q24 0.50 - 0.50 SOLID 06/06/2018 00:00:00 08/06/2018 15:31:45 180608-17 17701676 TM048	15/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 180608-17 **Client Reference:** **Report Number:** 461660
Location: Llanwern **Order Number:** LLA443 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-Q24 2.00 - 2.00 SOLID 06/06/2018 00:00:00 08/06/2018 15:29:08 180608-17 17701698 TM048	15/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-Q27 0.70 - 0.70 SOLID 06/06/2018 00:00:00 08/06/2018 16:02:12 180608-17 17701727 TM048	18/06/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-Q27 1.90 - 1.90 SOLID 06/06/2018 00:00:00 08/06/2018 12:12:41 180608-17 17701744 TM048	18/06/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-R25 1.00 - 1.00 SOLID 06/06/2018 00:00:00 08/06/2018 15:09:01 180608-17 17701771 TM048	18/06/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-S27 0.70 - 0.70 SOLID 06/06/2018 00:00:00 08/06/2018 15:07:24 180608-17 17701812 TM048	18/06/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701568
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00353	<0.0005	0.0353	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00122	<0.001	0.0122	<0.01	-	-	-
Copper	0.00237	<0.0003	0.0237	<0.003	-	-	-
Lead	0.00389	<0.0002	0.0389	<0.002	-	-	-
Manganese	0.0216	<0.003	0.216	<0.03	-	-	-
Nickel	0.000622	<0.0004	0.00622	<0.004	-	-	-
Selenium	0.00484	<0.001	0.0484	<0.01	-	-	-
Vanadium	0.0467	<0.001	0.467	<0.01	-	-	-
Zinc	0.00688	<0.001	0.0688	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.172	<0.019	1.72	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000014	<0.00001	0.00014	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.58
Conductivity (µS/cm)	182.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701568
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.58
Conductivity (µS/cm)	182.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701575
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00491	<0.0005	0.0491	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00166	<0.0003	0.0166	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00972	<0.003	0.0972	<0.03	-	-	-
Nickel	0.000758	<0.0004	0.00758	<0.004	-	-	-
Selenium	0.00409	<0.001	0.0409	<0.01	-	-	-
Vanadium	0.0274	<0.001	0.274	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.307	<0.019	3.07	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000299	<0.000005	0.000299	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000181	<0.000005	0.000181	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000902	<0.000082	0.000902	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	6.66
Conductivity (µS/cm)	156.00
Temperature (°C)	21.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701575
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	6.66
Conductivity (µS/cm)	156.00
Temperature (°C)	21.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.06
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701582
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00628	<0.0005	0.0628	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00168	<0.0003	0.0168	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000953	<0.0004	0.00953	<0.004	-	-	-
Selenium	0.00281	<0.001	0.0281	<0.01	-	-	-
Vanadium	0.0419	<0.001	0.419	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000114	<0.00001	0.000114	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000826	<0.000005	0.0000826	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000982	<0.000005	0.0000982	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.71
Conductivity (µS/cm)	150.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.06
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701582
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.011	<0.01	0.11	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.011	<0.01	0.11	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.71
Conductivity (µS/cm)	150.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701588
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00275	<0.0005	0.0275	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00126	<0.001	0.0126	<0.01	-	-	-
Copper	0.00218	<0.0003	0.0218	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000633	<0.0004	0.00633	<0.004	-	-	-
Selenium	0.00184	<0.001	0.0184	<0.01	-	-	-
Vanadium	0.00502	<0.001	0.0502	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.353	<0.019	3.53	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000227	<0.000005	0.000227	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000295	<0.000005	0.000295	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.48
Conductivity (µS/cm)	130.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701588
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.48
Conductivity (µS/cm)	130.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	1.63
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.4
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701595
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	2.30 - 2.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00404	<0.0005	0.0404	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00235	<0.001	0.0235	<0.01	-	-	-
Copper	0.00475	<0.0003	0.0475	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000609	<0.0004	0.00609	<0.004	-	-	-
Selenium	0.0019	<0.001	0.019	<0.01	-	-	-
Vanadium	0.118	<0.001	1.18	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000018	<0.00001	0.00018	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000501	<0.000005	0.0000501	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000295	<0.000005	0.000295	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000126	<0.000002	0.000126	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000111	<0.000082	0.00111	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.76
Conductivity (µS/cm)	151.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	1.63
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.4
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701595
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	2.30 - 2.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.013	<0.01	0.13	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	0.013	<0.01	0.13	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.028	<0.01	0.28	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.013	<0.01	0.13	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.76
Conductivity (µS/cm)	151.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	0.827
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.2
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701606
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00223	<0.0005	0.0223	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00178	<0.0003	0.0178	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000413	<0.0004	0.00413	<0.004	-	-	-
Selenium	0.0019	<0.001	0.019	<0.01	-	-	-
Vanadium	0.0286	<0.001	0.286	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000146	<0.00001	0.000146	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000282	<0.000005	0.000282	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000289	<0.000005	0.000289	<0.00005	-	-	-
Fluorene by GCMS	0.00000998	<0.000005	0.0000998	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000272	<0.000005	0.000272	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000143	<0.000002	0.000143	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000709	<0.000005	0.0000709	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000725	<0.000005	0.0000725	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000152	<0.000082	0.00152	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.05
Conductivity (µS/cm)	111.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	0.827
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.2
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701606
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.016	<0.01	0.16	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.05
Conductivity (µS/cm)	111.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701612
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00407	<0.0005	0.0407	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00137	<0.0003	0.0137	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000428	<0.0004	0.00428	<0.004	-	-	-
Selenium	0.00216	<0.001	0.0216	<0.01	-	-	-
Vanadium	0.0257	<0.001	0.257	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000368	<0.00001	0.000368	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000226	<0.000005	0.000226	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000767	<0.000005	0.000767	<0.00005	-	-	-
Anthracene by GCMS	0.00000907	<0.000005	0.0000907	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000422	<0.000005	0.000422	<0.00005	-	-	-
Fluorene by GCMS	0.0000277	<0.000005	0.000277	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000813	<0.000005	0.000813	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000296	<0.000082	0.00296	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	7.29
Conductivity (µS/cm)	121.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701612
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	7.29
Conductivity (µS/cm)	121.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701617
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000893	<0.0005	0.00893	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0013	<0.0003	0.013	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00355	<0.003	0.0355	<0.03	-	-	-
Nickel	0.000476	<0.0004	0.00476	<0.004	-	-	-
Selenium	0.00389	<0.001	0.0389	<0.01	-	-	-
Vanadium	0.127	<0.001	1.27	<0.01	-	-	-
Zinc	0.00101	<0.001	0.0101	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000258	<0.00001	0.00258	<0.0001	-	-	-
Acenaphthene by GCMS	0.00035	<0.000005	0.0035	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000668	<0.000005	0.000668	<0.00005	-	-	-
Fluoranthene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Anthracene by GCMS	0.0000531	<0.000005	0.000531	<0.00005	-	-	-
Phenanthrene by GCMS	0.00104	<0.000005	0.0104	<0.00005	-	-	-
Fluorene by GCMS	0.00108	<0.000005	0.0108	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000063	<0.000005	0.000063	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00312	<0.000082	0.0312	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.436	<0.05	4.36	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.01	<0.01	0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.28
Conductivity (µS/cm)	195.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701617
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.05	<0.01	0.5	<0.1	-	-	-
Aliphatics >C10-C12	0.201	<0.01	2.01	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.035	<0.01	0.35	<0.1	-	-	-
Aromatics >EC10-EC12	0.134	<0.01	1.34	<0.1	-	-	-
Aromatics >EC12-EC16	0.049	<0.01	0.49	<0.1	-	-	-
Aromatics >EC16-EC21	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.068	<0.01	0.68	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.504	<0.01	5.04	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.28
Conductivity (µS/cm)	195.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	1.94
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701621
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	2.30 - 2.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00245	<0.0005	0.0245	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00111	<0.0003	0.0111	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000439	<0.0004	0.00439	<0.004	-	-	-
Selenium	0.00551	<0.001	0.0551	<0.01	-	-	-
Vanadium	0.0681	<0.001	0.681	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000279	<0.00001	0.000279	<0.0001	-	-	-
Acenaphthene by GCMS	0.000566	<0.000005	0.00566	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Fluoranthene by GCMS	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Anthracene by GCMS	0.0000815	<0.000005	0.000815	<0.00005	-	-	-
Phenanthrene by GCMS	0.00128	<0.000005	0.0128	<0.00005	-	-	-
Fluorene by GCMS	0.00176	<0.000005	0.0176	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00411	<0.000082	0.0411	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.239	<0.05	2.39	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.75
Conductivity (µS/cm)	185.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	1.94
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701621
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	2.30 - 2.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.028	<0.01	0.28	<0.1	-	-	-
Aliphatics >C10-C12	0.108	<0.01	1.08	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics >EC10-EC12	0.072	<0.01	0.72	<0.1	-	-	-
Aromatics >EC12-EC16	0.1	<0.01	1	<0.1	-	-	-
Aromatics >EC16-EC21	0.051	<0.01	0.51	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.151	<0.01	1.51	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.39	<0.01	3.9	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.75
Conductivity (µS/cm)	185.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701627
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O23
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000952	<0.0005	0.00952	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00513	<0.001	0.0513	<0.01	-	-	-
Copper	0.0216	<0.0003	0.216	<0.003	-	-	-
Lead	0.00295	<0.0002	0.0295	<0.002	-	-	-
Manganese	0.00862	<0.003	0.0862	<0.03	-	-	-
Nickel	0.000842	<0.0004	0.00842	<0.004	-	-	-
Selenium	0.00241	<0.001	0.0241	<0.01	-	-	-
Vanadium	0.0219	<0.001	0.219	<0.01	-	-	-
Zinc	0.00535	<0.001	0.0535	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.367	<0.019	3.67	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000306	<0.00001	0.000306	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000889	<0.000005	0.0000889	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000404	<0.000005	0.000404	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000441	<0.000005	0.000441	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000377	<0.000005	0.000377	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000162	<0.000082	0.00162	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	768.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701627
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O23
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	768.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701633
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00727	<0.0005	0.0727	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000648	<0.0004	0.00648	<0.004	-	-	-
Selenium	0.00762	<0.001	0.0762	<0.01	-	-	-
Vanadium	0.0453	<0.001	0.453	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	7.09
Conductivity (µS/cm)	117.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701633
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	7.09
Conductivity (µS/cm)	117.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701637
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O23
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00111	<0.0005	0.0111	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00562	<0.001	0.0562	<0.01	-	-	-
Copper	0.00967	<0.0003	0.0967	<0.003	-	-	-
Lead	0.00139	<0.0002	0.0139	<0.002	-	-	-
Manganese	0.00534	<0.003	0.0534	<0.03	-	-	-
Nickel	0.000615	<0.0004	0.00615	<0.004	-	-	-
Selenium	0.0027	<0.001	0.027	<0.01	-	-	-
Vanadium	0.0391	<0.001	0.391	<0.01	-	-	-
Zinc	0.00277	<0.001	0.0277	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.295	<0.019	2.95	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000397	<0.00001	0.000397	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000213	<0.000005	0.000213	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Anthracene by GCMS	0.000007	<0.000005	0.00007	<0.00005	-	-	-
Phenanthrene by GCMS	0.000152	<0.000005	0.00152	<0.00005	-	-	-
Fluorene by GCMS	0.00000798	<0.000005	0.0000798	<0.00005	-	-	-
Chrysene by GCMS	0.0000057	<0.000005	0.000057	<0.00005	-	-	-
Pyrene by GCMS	0.0000865	<0.000005	0.000865	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000768	<0.000005	0.0000768	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000101	<0.000002	0.000101	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000453	<0.000082	0.00453	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.02
Conductivity (µS/cm)	336.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701637
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O23
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.011	<0.01	0.11	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.012	<0.01	0.12	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.02
Conductivity (µS/cm)	336.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.6
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701642
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O23
Depth (m)	1.30 - 1.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000103	<0.00001	0.000103	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00391	<0.0005	0.0391	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00258	<0.001	0.0258	<0.01	-	-	-
Copper	0.0131	<0.0003	0.131	<0.003	-	-	-
Lead	0.00109	<0.0002	0.0109	<0.002	-	-	-
Manganese	0.00708	<0.003	0.0708	<0.03	-	-	-
Nickel	0.00102	<0.0004	0.0102	<0.004	-	-	-
Selenium	0.00342	<0.001	0.0342	<0.01	-	-	-
Vanadium	0.111	<0.001	1.11	<0.01	-	-	-
Zinc	0.00169	<0.001	0.0169	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.835	<0.019	8.35	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000225	<0.00001	0.000225	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000277	<0.000005	0.000277	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000148	<0.000005	0.000148	<0.00005	-	-	-
Anthracene by GCMS	0.00000527	<0.000005	0.0000527	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000445	<0.000005	0.000445	<0.00005	-	-	-
Fluorene by GCMS	0.00000539	<0.000005	0.0000539	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000507	<0.000002	0.0000507	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000148	<0.000082	0.00148	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.90
Conductivity (µS/cm)	286.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.6
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701642
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O23
Depth (m)	1.30 - 1.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.90
Conductivity (µS/cm)	286.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701646
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00713	<0.001	0.0713	<0.01	-	-	-
Copper	0.00553	<0.0003	0.0553	<0.003	-	-	-
Lead	0.00059	<0.0002	0.0059	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00122	<0.001	0.0122	<0.01	-	-	-
Vanadium	0.00527	<0.001	0.0527	<0.01	-	-	-
Zinc	0.00115	<0.001	0.0115	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000384	<0.00001	0.000384	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000195	<0.000005	0.00195	<0.00005	-	-	-
Anthracene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Phenanthrene by GCMS	0.000272	<0.000005	0.00272	<0.00005	-	-	-
Fluorene by GCMS	0.00000534	<0.000005	0.0000534	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000673	<0.000082	0.00673	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.91
Conductivity (µS/cm)	1,690.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701646
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.91
Conductivity (µS/cm)	1,690.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701651
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00713	<0.001	0.0713	<0.01	-	-	-
Copper	0.00471	<0.0003	0.0471	<0.003	-	-	-
Lead	0.00083	<0.0002	0.0083	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0047	<0.001	0.047	<0.01	-	-	-
Zinc	0.00402	<0.001	0.0402	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000102	<0.00001	0.00102	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000583	<0.000005	0.000583	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000321	<0.000005	0.00321	<0.00005	-	-	-
Anthracene by GCMS	0.0000222	<0.000005	0.000222	<0.00005	-	-	-
Phenanthrene by GCMS	0.000613	<0.000005	0.00613	<0.00005	-	-	-
Fluorene by GCMS	0.00000692	<0.000005	0.0000692	<0.00005	-	-	-
Chrysene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Pyrene by GCMS	0.000216	<0.000005	0.00216	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000157	<0.000005	0.000157	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00137	<0.000082	0.0137	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.84
Conductivity (µS/cm)	1,880.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701651
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.84
Conductivity (µS/cm)	1,880.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701657
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	24.3	<0.2	243	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00743	<0.001	0.0743	<0.01	-	-	-
Copper	0.00194	<0.0003	0.0194	<0.003	-	-	-
Lead	0.0016	<0.0002	0.016	<0.002	-	-	-
Manganese	0.0229	<0.003	0.229	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00639	<0.001	0.0639	<0.01	-	-	-
Zinc	0.00285	<0.001	0.0285	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.712	<0.019	7.12	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00025	<0.00001	0.0025	<0.0001	-	-	-
Acenaphthene by GCMS	0.00016	<0.000005	0.0016	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Fluoranthene by GCMS	0.000245	<0.000005	0.00245	<0.00005	-	-	-
Anthracene by GCMS	0.000056	<0.000005	0.00056	<0.00005	-	-	-
Phenanthrene by GCMS	0.000482	<0.000005	0.00482	<0.00005	-	-	-
Fluorene by GCMS	0.000147	<0.000005	0.00147	<0.00005	-	-	-
Chrysene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Pyrene by GCMS	0.000251	<0.000005	0.00251	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000106	<0.000005	0.000106	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000726	<0.000005	0.0000726	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00164	<0.000082	0.0164	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,560.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701657
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.013	<0.01	0.13	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,560.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701662
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	2.80 - 2.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00117	<0.001	0.0117	<0.01	-	-	-
Copper	0.00194	<0.0003	0.0194	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000551	<0.0004	0.00551	<0.004	-	-	-
Selenium	0.00174	<0.001	0.0174	<0.01	-	-	-
Vanadium	0.0307	<0.001	0.307	<0.01	-	-	-
Zinc	0.00105	<0.001	0.0105	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000117	<0.00001	0.00117	<0.0001	-	-	-
Acenaphthene by GCMS	0.000543	<0.000005	0.00543	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000275	<0.000005	0.000275	<0.00005	-	-	-
Fluoranthene by GCMS	0.000189	<0.000005	0.00189	<0.00005	-	-	-
Anthracene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Phenanthrene by GCMS	0.000913	<0.000005	0.00913	<0.00005	-	-	-
Fluorene by GCMS	0.000331	<0.000005	0.00331	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00236	<0.000082	0.0236	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.36
Conductivity (µS/cm)	692.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701662
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	2.80 - 2.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.36
Conductivity (µS/cm)	692.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701676
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q24
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.248	<0.2	2.48	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0027	<0.0005	0.027	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00346	<0.0003	0.0346	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000684	<0.0004	0.00684	<0.004	-	-	-
Selenium	0.0014	<0.001	0.014	<0.01	-	-	-
Vanadium	0.0731	<0.001	0.731	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000028	<0.00001	0.00028	<0.0001	-	-	-
Acenaphthene by GCMS	0.000218	<0.000005	0.00218	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000727	<0.000005	0.00727	<0.00005	-	-	-
Anthracene by GCMS	0.0000611	<0.000005	0.000611	<0.00005	-	-	-
Phenanthrene by GCMS	0.000173	<0.000005	0.00173	<0.00005	-	-	-
Fluorene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Chrysene by GCMS	0.0000311	<0.000005	0.000311	<0.00005	-	-	-
Pyrene by GCMS	0.00071	<0.000005	0.0071	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000317	<0.000005	0.000317	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00199	<0.000082	0.0199	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.76
Conductivity (µS/cm)	295.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701676
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q24
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.76
Conductivity (µS/cm)	295.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701691
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q24
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.882	<0.2	8.82	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00588	<0.0005	0.0588	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00336	<0.0003	0.0336	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000745	<0.0004	0.00745	<0.004	-	-	-
Selenium	0.00175	<0.001	0.0175	<0.01	-	-	-
Vanadium	0.0808	<0.001	0.808	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000355	<0.00001	0.000355	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000722	<0.000005	0.000722	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000253	<0.000005	0.00253	<0.00005	-	-	-
Anthracene by GCMS	0.0000575	<0.000005	0.000575	<0.00005	-	-	-
Phenanthrene by GCMS	0.000216	<0.000005	0.00216	<0.00005	-	-	-
Fluorene by GCMS	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Chrysene by GCMS	0.0000253	<0.000005	0.000253	<0.00005	-	-	-
Pyrene by GCMS	0.000363	<0.000005	0.00363	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000235	<0.000005	0.000235	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000716	<0.000005	0.0000716	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00107	<0.000082	0.0107	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.58
Conductivity (µS/cm)	274.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701691
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q24
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.58
Conductivity (µS/cm)	274.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701698
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q24
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000941	<0.0005	0.00941	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00101	<0.001	0.0101	<0.01	-	-	-
Copper	0.00211	<0.0003	0.0211	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000586	<0.0004	0.00586	<0.004	-	-	-
Selenium	0.00139	<0.001	0.0139	<0.01	-	-	-
Vanadium	0.065	<0.001	0.65	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000411	<0.00001	0.000411	<0.0001	-	-	-
Acenaphthene by GCMS	0.000335	<0.000005	0.00335	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000692	<0.000005	0.0000692	<0.00005	-	-	-
Fluoranthene by GCMS	0.000453	<0.000005	0.00453	<0.00005	-	-	-
Anthracene by GCMS	0.0000731	<0.000005	0.000731	<0.00005	-	-	-
Phenanthrene by GCMS	0.000272	<0.000005	0.00272	<0.00005	-	-	-
Fluorene by GCMS	0.0000371	<0.000005	0.000371	<0.00005	-	-	-
Chrysene by GCMS	0.0000347	<0.000005	0.000347	<0.00005	-	-	-
Pyrene by GCMS	0.00047	<0.000005	0.0047	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000343	<0.000005	0.000343	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000666	<0.000005	0.0000666	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000711	<0.000002	0.0000711	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000782	<0.000005	0.0000782	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000556	<0.000005	0.0000556	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0018	<0.000082	0.018	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.48
Conductivity (µS/cm)	232.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701698
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q24
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.48
Conductivity (µS/cm)	232.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701703
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000284	<0.00001	0.000284	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000778	<0.0005	0.00778	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00216	<0.001	0.0216	<0.01	-	-	-
Copper	0.00132	<0.0003	0.0132	<0.003	-	-	-
Lead	0.00164	<0.0002	0.0164	<0.002	-	-	-
Manganese	0.0341	<0.003	0.341	<0.03	-	-	-
Nickel	0.000425	<0.0004	0.00425	<0.004	-	-	-
Selenium	0.00403	<0.001	0.0403	<0.01	-	-	-
Vanadium	0.0412	<0.001	0.412	<0.01	-	-	-
Zinc	0.00561	<0.001	0.0561	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.7	<0.019	7	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000653	<0.000005	0.0000653	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.90
Conductivity (µS/cm)	339.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701703
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.01	<0.01	0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.90
Conductivity (µS/cm)	339.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701719
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000129	<0.00001	0.000129	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000965	<0.0005	0.00965	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00587	<0.001	0.0587	<0.01	-	-	-
Copper	0.00526	<0.0003	0.0526	<0.003	-	-	-
Lead	0.00028	<0.0002	0.0028	<0.002	-	-	-
Manganese	0.00689	<0.003	0.0689	<0.03	-	-	-
Nickel	0.0005	<0.0004	0.005	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0242	<0.001	0.242	<0.01	-	-	-
Zinc	0.00773	<0.001	0.0773	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0192	<0.019	0.192	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000639	<0.0002	0.00639	<0.002	-	-	-
Acenaphthene by GCMS	0.000818	<0.0001	0.00818	<0.001	-	-	-
Acenaphthylene by GCMS	0.000158	<0.0001	0.00158	<0.001	-	-	-
Fluoranthene by GCMS	0.0238	<0.0001	0.238	<0.001	-	-	-
Anthracene by GCMS	0.00676	<0.0001	0.0676	<0.001	-	-	-
Phenanthrene by GCMS	0.112	<0.0001	1.12	<0.001	-	-	-
Fluorene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Chrysene by GCMS	0.000658	<0.0001	0.00658	<0.001	-	-	-
Pyrene by GCMS	0.0156	<0.0001	0.156	<0.001	-	-	-
Benz(a)anthracene by GCMS	0.00112	<0.0001	0.0112	<0.001	-	-	-
Benzo(b)fluoranthene by GCMS	0.000325	<0.0001	0.00325	<0.001	-	-	-
Benzo(k)fluoranthene by GCMS	0.000196	<0.0001	0.00196	<0.001	-	-	-
Benzo(a)pyrene by GCMS	0.000165	<0.00004	0.00165	<0.0004	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000118	<0.0001	0.00118	<0.001	-	-	-
Benzo(ghi)perylene by GCMS	0.000139	<0.0001	0.00139	<0.001	-	-	-
Indeno(123cd)pyrene by GCMS	0.000125	<0.0001	0.00125	<0.001	-	-	-
PAH 16 EPA Total by GCMS	0.163	<0.00164	1.63	<0.0164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.81
Conductivity (µS/cm)	1,420.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701719
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.058	<0.01	0.58	<0.1	-	-	-
Aromatics >EC16-EC21	0.294	<0.01	2.94	<0.1	-	-	-
Aromatics >EC21-EC35	0.016	<0.01	0.16	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.368	<0.01	3.68	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.368	<0.01	3.68	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.81
Conductivity (µS/cm)	1,420.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701727
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.221	<0.2	2.21	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00277	<0.0005	0.0277	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00108	<0.001	0.0108	<0.01	-	-	-
Copper	0.00535	<0.0003	0.0535	<0.003	-	-	-
Lead	0.00166	<0.0002	0.0166	<0.002	-	-	-
Manganese	0.0479	<0.003	0.479	<0.03	-	-	-
Nickel	0.00163	<0.0004	0.0163	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00227	<0.001	0.0227	<0.01	-	-	-
Zinc	0.00333	<0.001	0.0333	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.146	<0.019	1.46	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00123	<0.00001	0.0123	<0.0001	-	-	-
Acenaphthene by GCMS	0.00233	<0.000005	0.0233	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000217	<0.000005	0.000217	<0.00005	-	-	-
Fluoranthene by GCMS	0.00334	<0.000005	0.0334	<0.00005	-	-	-
Anthracene by GCMS	0.000834	<0.000005	0.00834	<0.00005	-	-	-
Phenanthrene by GCMS	0.0084	<0.000005	0.084	<0.00005	-	-	-
Fluorene by GCMS	0.000344	<0.000005	0.00344	<0.00005	-	-	-
Chrysene by GCMS	0.000166	<0.000005	0.00166	<0.00005	-	-	-
Pyrene by GCMS	0.00235	<0.000005	0.0235	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000201	<0.000005	0.00201	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000423	<0.000005	0.000423	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000106	<0.000002	0.000106	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0193	<0.000082	0.193	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	12.23
Conductivity (µS/cm)	5,590.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701727
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC16-EC21	0.027	<0.01	0.27	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.043	<0.01	0.43	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.06	<0.01	0.6	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	12.23
Conductivity (µS/cm)	5,590.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701735
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000567	<0.0005	0.00567	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00137	<0.001	0.0137	<0.01	-	-	-
Copper	0.00276	<0.0003	0.0276	<0.003	-	-	-
Lead	0.002	<0.0002	0.02	<0.002	-	-	-
Manganese	0.0244	<0.003	0.244	<0.03	-	-	-
Nickel	0.000846	<0.0004	0.00846	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00144	<0.001	0.0144	<0.01	-	-	-
Zinc	0.00246	<0.001	0.0246	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.487	<0.019	4.87	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000714	<0.00001	0.00714	<0.0001	-	-	-
Acenaphthene by GCMS	0.00167	<0.000005	0.0167	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Fluoranthene by GCMS	0.0032	<0.000005	0.032	<0.00005	-	-	-
Anthracene by GCMS	0.000774	<0.000005	0.00774	<0.00005	-	-	-
Phenanthrene by GCMS	0.00652	<0.000005	0.0652	<0.00005	-	-	-
Fluorene by GCMS	0.000269	<0.000005	0.00269	<0.00005	-	-	-
Chrysene by GCMS	0.000147	<0.000005	0.00147	<0.00005	-	-	-
Pyrene by GCMS	0.00229	<0.000005	0.0229	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000181	<0.000005	0.00181	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000399	<0.000005	0.000399	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000154	<0.000005	0.000154	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000103	<0.000002	0.000103	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0158	<0.000082	0.158	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	12.23
Conductivity (µS/cm)	5,720.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701735
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.033	<0.01	0.33	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.033	<0.01	0.33	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.049	<0.01	0.49	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	12.23
Conductivity (µS/cm)	5,720.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.7
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701744
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	1.90 - 1.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000653	<0.0005	0.00653	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0104	<0.001	0.104	<0.01	-	-	-
Copper	0.00309	<0.0003	0.0309	<0.003	-	-	-
Lead	0.00444	<0.0002	0.0444	<0.002	-	-	-
Manganese	0.0408	<0.003	0.408	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00227	<0.001	0.0227	<0.01	-	-	-
Zinc	0.00616	<0.001	0.0616	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.883	<0.019	8.83	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000677	<0.00001	0.000677	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000256	<0.000005	0.000256	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000195	<0.000005	0.00195	<0.00005	-	-	-
Anthracene by GCMS	0.000024	<0.000005	0.00024	<0.00005	-	-	-
Phenanthrene by GCMS	0.0005	<0.000005	0.005	<0.00005	-	-	-
Fluorene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
Chrysene by GCMS	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Pyrene by GCMS	0.00015	<0.000005	0.0015	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000591	<0.000005	0.0000591	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000995	<0.000082	0.00995	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	12.37
Conductivity (µS/cm)	7,020.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.7
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701744
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	1.90 - 1.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	12.37
Conductivity (µS/cm)	7,020.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701761
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-R25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.17	<0.2	11.7	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00126	<0.0005	0.0126	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00111	<0.001	0.0111	<0.01	-	-	-
Copper	0.0084	<0.0003	0.084	<0.003	-	-	-
Lead	0.000521	<0.0002	0.00521	<0.002	-	-	-
Manganese	0.00732	<0.003	0.0732	<0.03	-	-	-
Nickel	0.00134	<0.0004	0.0134	<0.004	-	-	-
Selenium	0.00377	<0.001	0.0377	<0.01	-	-	-
Vanadium	0.0832	<0.001	0.832	<0.01	-	-	-
Zinc	0.00273	<0.001	0.0273	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0613	<0.019	0.613	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00014	<0.00001	0.0014	<0.0001	-	-	-
Acenaphthene by GCMS	0.000388	<0.000005	0.00388	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00056	<0.000005	0.0056	<0.00005	-	-	-
Anthracene by GCMS	0.0000993	<0.000005	0.000993	<0.00005	-	-	-
Phenanthrene by GCMS	0.000482	<0.000005	0.00482	<0.00005	-	-	-
Fluorene by GCMS	0.000157	<0.000005	0.00157	<0.00005	-	-	-
Chrysene by GCMS	0.0000718	<0.000005	0.000718	<0.00005	-	-	-
Pyrene by GCMS	0.000874	<0.000005	0.00874	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000526	<0.000005	0.000526	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000616	<0.000002	0.0000616	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00285	<0.000082	0.0285	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.06
Conductivity (µS/cm)	508.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701761
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-R25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.06
Conductivity (µS/cm)	508.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701771
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-R25
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00111	<0.0005	0.0111	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00471	<0.0003	0.0471	<0.003	-	-	-
Lead	0.000422	<0.0002	0.00422	<0.002	-	-	-
Manganese	0.00605	<0.003	0.0605	<0.03	-	-	-
Nickel	0.00159	<0.0004	0.0159	<0.004	-	-	-
Selenium	0.0099	<0.001	0.099	<0.01	-	-	-
Vanadium	0.0831	<0.001	0.831	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.265	<0.019	2.65	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00019	<0.00001	0.0019	<0.0001	-	-	-
Acenaphthene by GCMS	0.000728	<0.000005	0.00728	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000978	<0.000005	0.0000978	<0.00005	-	-	-
Fluoranthene by GCMS	0.00104	<0.000005	0.0104	<0.00005	-	-	-
Anthracene by GCMS	0.000254	<0.000005	0.00254	<0.00005	-	-	-
Phenanthrene by GCMS	0.00117	<0.000005	0.0117	<0.00005	-	-	-
Fluorene by GCMS	0.000241	<0.000005	0.00241	<0.00005	-	-	-
Chrysene by GCMS	0.0000524	<0.000005	0.000524	<0.00005	-	-	-
Pyrene by GCMS	0.000851	<0.000005	0.00851	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000438	<0.000005	0.000438	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000531	<0.000002	0.0000531	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0046	<0.000082	0.046	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.19
Conductivity (µS/cm)	627.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701771
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-R25
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.19
Conductivity (µS/cm)	627.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701792
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-S27
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	22.5	<0.2	225	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00798	<0.0005	0.0798	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00184	<0.001	0.0184	<0.01	-	-	-
Copper	0.00492	<0.0003	0.0492	<0.003	-	-	-
Lead	0.000244	<0.0002	0.00244	<0.002	-	-	-
Manganese	0.00495	<0.003	0.0495	<0.03	-	-	-
Nickel	0.00161	<0.0004	0.0161	<0.004	-	-	-
Selenium	0.0044	<0.001	0.044	<0.01	-	-	-
Vanadium	0.118	<0.001	1.18	<0.01	-	-	-
Zinc	0.00306	<0.001	0.0306	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.306	<0.019	3.06	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000719	<0.000005	0.0000719	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000901	<0.000005	0.0000901	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000871	<0.000005	0.0000871	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.67
Conductivity (µS/cm)	405.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701792
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-S27
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.67
Conductivity (µS/cm)	405.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701802
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.64	<0.2	16.4	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00653	<0.0005	0.0653	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000794	<0.0003	0.00794	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00475	<0.003	0.0475	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00559	<0.001	0.0559	<0.01	-	-	-
Vanadium	0.0621	<0.001	0.621	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000573	<0.000005	0.0000573	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000515	<0.000005	0.0000515	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000006	<0.000005	0.00006	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.25
Conductivity (µS/cm)	189.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701802
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.01	<0.01	0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.25
Conductivity (µS/cm)	189.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701812
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-S27
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00871	<0.0005	0.0871	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00135	<0.0003	0.0135	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00109	<0.0004	0.0109	<0.004	-	-	-
Selenium	0.00235	<0.001	0.0235	<0.01	-	-	-
Vanadium	0.0763	<0.001	0.763	<0.01	-	-	-
Zinc	0.0067	<0.001	0.067	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.496	<0.019	4.96	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000974	<0.000005	0.0000974	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000985	<0.000005	0.0000985	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000916	<0.000005	0.0000916	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.16
Conductivity (µS/cm)	247.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701812
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-S27
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.16
Conductivity (µS/cm)	247.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701830
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-L20
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00208	<0.0005	0.0208	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000682	<0.0003	0.00682	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00235	<0.001	0.0235	<0.01	-	-	-
Vanadium	0.0503	<0.001	0.503	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000605	<0.000005	0.000605	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000481	<0.000005	0.000481	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000202	<0.000005	0.000202	<0.00005	-	-	-
Pyrene by GCMS	0.0000463	<0.000005	0.000463	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000249	<0.000005	0.000249	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000095	<0.000005	0.000095	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000112	<0.000002	0.000112	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000173	<0.000005	0.000173	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000268	<0.000082	0.00268	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.61
Conductivity (µS/cm)	109.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701830
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-L20
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.61
Conductivity (µS/cm)	109.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701838
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-L20
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0153	<0.0005	0.153	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00106	<0.001	0.0106	<0.01	-	-	-
Copper	0.000752	<0.0003	0.00752	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000551	<0.0004	0.00551	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0303	<0.001	0.303	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.437	<0.019	4.37	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000192	<0.000005	0.000192	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.10
Conductivity (µS/cm)	81.90
Temperature (°C)	20.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701838
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-L20
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.10
Conductivity (µS/cm)	81.90
Temperature (°C)	20.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.6
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701844
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-L20
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00191	<0.0005	0.0191	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00111	<0.0003	0.0111	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0551	<0.003	0.551	<0.03	-	-	-
Nickel	0.000689	<0.0004	0.00689	<0.004	-	-	-
Selenium	0.00282	<0.001	0.0282	<0.01	-	-	-
Vanadium	0.0033	<0.001	0.033	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.979	<0.019	9.79	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000162	<0.00001	0.000162	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000787	<0.000005	0.0000787	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000629	<0.000005	0.0000629	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.10
Conductivity (µS/cm)	161.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.6
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701844
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-L20
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.10
Conductivity (µS/cm)	161.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

25/06/2018 17:28:12

17:27:29 25/06/2018

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	17701568	17701633	17701703	17701802	17701826	17701830	17701838	17701844	17701850	17701606
Customer Sample Ref.	40A-G25	40A-G25	40A-G25	40A-G25	40A-G25-V	40A-L20	40A-L20	40A-L20	40A-L20-V	40A-N24
AGS Ref.										
Depth	0.50 - 0.50	1.20 - 1.20	2.00 - 2.00	3.00 - 3.00	3.10 - 3.10	0.50 - 0.50	1.00 - 1.00	2.50 - 2.50	3.50 - 3.50	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	15-Jun-2018		15-Jun-2018			15-Jun-2018		15-Jun-2018		
Ammoniacal Nitrogen	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018		19-Jun-2018	15-Jun-2018	19-Jun-2018		19-Jun-2018
Ammonium Soil by Titration	14-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018
Anions by Kone (soil)	18-Jun-2018		18-Jun-2018			18-Jun-2018		18-Jun-2018		
Asbestos ID in Solid Samples	18-Jun-2018		18-Jun-2018			18-Jun-2018		18-Jun-2018		
CEN 10:1 Leachate (1 Stage)	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018		09-Jun-2018	09-Jun-2018	09-Jun-2018		09-Jun-2018
CEN Readings	14-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018		12-Jun-2018	12-Jun-2018	12-Jun-2018		14-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018
Dissolved Metals by ICP-MS	19-Jun-2018	20-Jun-2018	19-Jun-2018	18-Jun-2018		19-Jun-2018	18-Jun-2018	19-Jun-2018		18-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	15-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018		16-Jun-2018	14-Jun-2018	16-Jun-2018		14-Jun-2018
EPH CWG (Aliphatic) GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	13-Jun-2018	15-Jun-2018	15-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	18-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	15-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018		16-Jun-2018	14-Jun-2018	16-Jun-2018		14-Jun-2018
EPH CWG (Aromatic) GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	13-Jun-2018	15-Jun-2018	15-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	18-Jun-2018
GRO by GC-FID (S)	18-Jun-2018	16-Jun-2018	18-Jun-2018	16-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	18-Jun-2018
GRO by GC-FID (W)	18-Jun-2018	18-Jun-2018	18-Jun-2018	19-Jun-2018		16-Jun-2018	18-Jun-2018	16-Jun-2018		19-Jun-2018
Mercury Dissolved	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018		14-Jun-2018	13-Jun-2018	14-Jun-2018		13-Jun-2018
Metals in solid samples by OES	15-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018
PAH by GCMS	18-Jun-2018	19-Jun-2018	18-Jun-2018	12-Jun-2018	14-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
PAH Spec MS - Aqueous (W)	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018		15-Jun-2018	15-Jun-2018	15-Jun-2018		15-Jun-2018
pH	18-Jun-2018	15-Jun-2018	18-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	15-Jun-2018	17-Jun-2018	18-Jun-2018	18-Jun-2018
pH Value	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018		14-Jun-2018	13-Jun-2018	14-Jun-2018		13-Jun-2018
Phenols by HPLC (S)	13-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018
Sample description	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Total Organic Carbon	18-Jun-2018	18-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	11-Jun-2018	18-Jun-2018
Total Sulphate	12-Jun-2018		12-Jun-2018			12-Jun-2018		12-Jun-2018		
Total Sulphur	13-Jun-2018		13-Jun-2018			13-Jun-2018		13-Jun-2018		
TPH CWG (W)	18-Jun-2018	18-Jun-2018	18-Jun-2018	19-Jun-2018		16-Jun-2018	18-Jun-2018	16-Jun-2018		19-Jun-2018
TPH CWG GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	18-Jun-2018
VOC MS (S)	15-Jun-2018	14-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	14-Jun-2018	15-Jun-2018

Lab Sample No(s)	17701612	17701617	17701621	17701575	17701582	17701588	17701595	17701601	17701627	17701637
Customer Sample Ref.	40A-N24	40A-N24	40A-N24	40A-N26	40A-N26	40A-N26	40A-N26	40A-N26-V	40A-O23	40A-O23
AGS Ref.										
Depth	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	2.60 - 2.60	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	15-Jun-2018		15-Jun-2018		15-Jun-2018		15-Jun-2018			15-Jun-2018
Ammoniacal Nitrogen	14-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	15-Jun-2018		19-Jun-2018	19-Jun-2018
Ammonium Soil by Titration	14-Jun-2018	14-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018
Anions by Kone (soil)	18-Jun-2018		18-Jun-2018		18-Jun-2018		18-Jun-2018			18-Jun-2018
Asbestos ID in Solid Samples	18-Jun-2018		18-Jun-2018		18-Jun-2018		18-Jun-2018			18-Jun-2018
CEN 10:1 Leachate (1 Stage)	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018		09-Jun-2018	09-Jun-2018
CEN Readings	14-Jun-2018	14-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	14-Jun-2018	12-Jun-2018		14-Jun-2018	14-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018
Dissolved Metals by ICP-MS	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018		18-Jun-2018	18-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	15-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	14-Jun-2018		14-Jun-2018	14-Jun-2018
EPH CWG (Aliphatic) GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018	13-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	15-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	14-Jun-2018		14-Jun-2018	14-Jun-2018
EPH CWG (Aromatic) GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018	13-Jun-2018
GRO by GC-FID (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
GRO by GC-FID (W)	13-Jun-2018	13-Jun-2018	19-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018	19-Jun-2018		19-Jun-2018	18-Jun-2018
Mercury Dissolved	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	12-Jun-2018	13-Jun-2018		13-Jun-2018	13-Jun-2018
Metals in solid samples by OES	14-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	13-Jun-2018	15-Jun-2018
PAH by GCMS	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018	18-Jun-2018	12-Jun-2018
PAH Spec MS - Aqueous (W)	13-Jun-2018	13-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	13-Jun-2018	15-Jun-2018		15-Jun-2018	15-Jun-2018
pH	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	12-Jun-2018	18-Jun-2018	18-Jun-2018
pH Value	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018		13-Jun-2018	13-Jun-2018
Phenols by HPLC (S)	14-Jun-2018	13-Jun-2018	14-Jun-2018	15-Jun-2018	13-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018
Sample description	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Total Organic Carbon	18-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	11-Jun-2018	15-Jun-2018
Total Sulphate	12-Jun-2018		12-Jun-2018		12-Jun-2018		12-Jun-2018			12-Jun-2018
Total Sulphur	13-Jun-2018		13-Jun-2018		13-Jun-2018		13-Jun-2018			13-Jun-2018
TPH CWG (W)	15-Jun-2018	15-Jun-2018	19-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018	19-Jun-2018		19-Jun-2018	18-Jun-2018
TPH CWG GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
VOC MS (S)	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018

Validated

CERTIFICATE OF ANALYSIS

SDG: 180608-17 **Client Reference:** **Report Number:** 461660
Location: Llanwern **Order Number:** LLA443 **Superseded Report:**

Lab Sample No(s)	17701642	17701646	17701651	17701657	17701662	17701667	17701676	17701691	17701698	17701719
Customer Sample Ref.	40A-O23	40A-O25	40A-O25	40A-O25	40A-O25	40A-O25-V	40A-Q24	40A-Q24	40A-Q24	40A-Q27
AGS Ref.										
Depth	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.80 - 2.80	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		15-Jun-2018		15-Jun-2018			15-Jun-2018		15-Jun-2018	
Ammoniacal Nitrogen	15-Jun-2018	19-Jun-2018	19-Jun-2018	15-Jun-2018	19-Jun-2018		19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018
Ammonium Soil by Titration	14-Jun-2018	15-Jun-2018	15-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018
Anions by Kone (soil)		19-Jun-2018		18-Jun-2018			18-Jun-2018		18-Jun-2018	
Asbestos ID in Solid Samples		15-Jun-2018		15-Jun-2018			15-Jun-2018		15-Jun-2018	
CEN 10:1 Leachate (1 Stage)	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018		09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018
CEN Readings	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018		12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018
Dissolved Metals by ICP-MS	18-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018		18-Jun-2018	19-Jun-2018	19-Jun-2018	18-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	14-Jun-2018	16-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018		16-Jun-2018	16-Jun-2018	16-Jun-2018	16-Jun-2018
EPH CWG (Aliphatic) GC (S)	13-Jun-2018	14-Jun-2018	14-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018	18-Jun-2018	18-Jun-2018	13-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	14-Jun-2018	16-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018		16-Jun-2018	16-Jun-2018	16-Jun-2018	16-Jun-2018
EPH CWG (Aromatic) GC (S)	13-Jun-2018	14-Jun-2018	14-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018	18-Jun-2018	18-Jun-2018	13-Jun-2018
GRO by GC-FID (S)	18-Jun-2018	18-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018
GRO by GC-FID (W)	18-Jun-2018	16-Jun-2018	16-Jun-2018	18-Jun-2018	16-Jun-2018		16-Jun-2018	16-Jun-2018	16-Jun-2018	15-Jun-2018
Mercury Dissolved	13-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	14-Jun-2018		14-Jun-2018	14-Jun-2018	14-Jun-2018	12-Jun-2018
Metals in solid samples by OES	13-Jun-2018	14-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018
PAH by GCMS	12-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018	14-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	12-Jun-2018
PAH Spec MS - Aqueous (W)	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018		15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018
pH	17-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
pH Value	13-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	14-Jun-2018		14-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018
Phenols by HPLC (S)	13-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018
Sample description	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Total Organic Carbon	18-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
Total Sulphate		12-Jun-2018		12-Jun-2018			12-Jun-2018		12-Jun-2018	
Total Sulphur		13-Jun-2018		13-Jun-2018			13-Jun-2018		13-Jun-2018	
TPH CWG (W)	18-Jun-2018	16-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018		16-Jun-2018	16-Jun-2018	16-Jun-2018	16-Jun-2018
TPH CWG GC (S)	18-Jun-2018	18-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
VOC MS (S)	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018

Lab Sample No(s)	17701727	17701735	17701744	17701711	17701753	17701761	17701771	17701781	17701792	17701812
Customer Sample Ref.	40A-Q27	40A-Q27	40A-Q27	40A-Q24-V	40A-Q27-V	40A-R25	40A-R25	40A-R25-V	40A-S27	40A-S27
AGS Ref.										
Depth	0.70 - 0.70	1.20 - 1.20	1.90 - 1.90	2.10 - 2.10	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.20 - 0.20	0.70 - 0.70
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	15-Jun-2018		15-Jun-2018				15-Jun-2018			15-Jun-2018
Ammoniacal Nitrogen	19-Jun-2018	19-Jun-2018	19-Jun-2018			18-Jun-2018	19-Jun-2018		19-Jun-2018	19-Jun-2018
Ammonium Soil by Titration	15-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018
Anions by Kone (soil)	18-Jun-2018		22-Jun-2018				18-Jun-2018			18-Jun-2018
Asbestos ID in Solid Samples	18-Jun-2018		18-Jun-2018				18-Jun-2018			18-Jun-2018
CEN 10:1 Leachate (1 Stage)	09-Jun-2018	09-Jun-2018	09-Jun-2018			09-Jun-2018	09-Jun-2018		09-Jun-2018	09-Jun-2018
CEN Readings	11-Jun-2018	14-Jun-2018	14-Jun-2018			13-Jun-2018	13-Jun-2018		13-Jun-2018	14-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018
Dissolved Metals by ICP-MS	18-Jun-2018	18-Jun-2018	18-Jun-2018			18-Jun-2018	20-Jun-2018		19-Jun-2018	20-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	16-Jun-2018	15-Jun-2018	15-Jun-2018			16-Jun-2018	18-Jun-2018		18-Jun-2018	18-Jun-2018
EPH CWG (Aliphatic) GC (S)	13-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	16-Jun-2018	15-Jun-2018	15-Jun-2018			16-Jun-2018	18-Jun-2018		18-Jun-2018	18-Jun-2018
EPH CWG (Aromatic) GC (S)	13-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018
GRO by GC-FID (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
GRO by GC-FID (W)	13-Jun-2018	14-Jun-2018	18-Jun-2018			13-Jun-2018	18-Jun-2018		18-Jun-2018	18-Jun-2018
Mercury Dissolved	12-Jun-2018	12-Jun-2018	12-Jun-2018			12-Jun-2018	13-Jun-2018		13-Jun-2018	13-Jun-2018
Metals in solid samples by OES	14-Jun-2018	14-Jun-2018	15-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	18-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018
PAH by GCMS	12-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018	15-Jun-2018
PAH Spec MS - Aqueous (W)	15-Jun-2018	13-Jun-2018	13-Jun-2018			15-Jun-2018	15-Jun-2018		15-Jun-2018	15-Jun-2018
pH	17-Jun-2018	15-Jun-2018	17-Jun-2018	18-Jun-2018	15-Jun-2018	17-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018
pH Value	15-Jun-2018	13-Jun-2018	13-Jun-2018			15-Jun-2018	14-Jun-2018		14-Jun-2018	13-Jun-2018
Phenols by HPLC (S)	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018
Sample description	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Total Organic Carbon	18-Jun-2018	14-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
Total Sulphate	12-Jun-2018		12-Jun-2018				12-Jun-2018			12-Jun-2018
Total Sulphur	13-Jun-2018		13-Jun-2018				13-Jun-2018			13-Jun-2018
TPH CWG (W)	16-Jun-2018	15-Jun-2018	18-Jun-2018			16-Jun-2018	18-Jun-2018		18-Jun-2018	18-Jun-2018
TPH CWG GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
VOC MS (S)	15-Jun-2018	15-Jun-2018	18-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Lab Sample No(s)	17701818
Customer Sample Ref.	40A-S27-V
AGS Ref.	
Depth	0.80 - 0.80
Type	Soil/Solid (S)

Ammonium Soil by Titration	15-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	19-Jun-2018
EPH CWG (Aliphatic) GC (S)	18-Jun-2018
EPH CWG (Aromatic) GC (S)	18-Jun-2018
GRO by GC-FID (S)	18-Jun-2018
Metals in solid samples by OES	13-Jun-2018
PAH by GCMS	19-Jun-2018
pH	18-Jun-2018
Phenols by HPLC (S)	13-Jun-2018
Sample description	08-Jun-2018
Total Organic Carbon	18-Jun-2018
TPH CWG GC (S)	18-Jun-2018
VOC MS (S)	15-Jun-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	25 June 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180608-17
Your Reference:	
Location:	Llanwern
Report No:	461660

We received 41 samples on Friday June 08, 2018 and 41 of these samples were scheduled for analysis which was completed on Friday June 22, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17701568	40A-G25		0.50 - 0.50	05/06/2018
17701633	40A-G25		1.20 - 1.20	05/06/2018
17701703	40A-G25		2.00 - 2.00	05/06/2018
17701802	40A-G25		3.00 - 3.00	05/06/2018
17701826	40A-G25-V		3.10 - 3.10	05/06/2018
17701830	40A-L20		0.50 - 0.50	05/06/2018
17701838	40A-L20		1.00 - 1.00	05/06/2018
17701844	40A-L20		2.50 - 2.50	05/06/2018
17701850	40A-L20-V		3.50 - 3.50	05/06/2018
17701606	40A-N24		0.50 - 0.50	06/06/2018
17701612	40A-N24		1.00 - 1.00	06/06/2018
17701617	40A-N24		1.70 - 1.70	06/06/2018
17701621	40A-N24		2.30 - 2.30	06/06/2018
17701575	40A-N26		0.50 - 0.50	06/06/2018
17701582	40A-N26		1.00 - 1.00	06/06/2018
17701588	40A-N26		1.70 - 1.70	06/06/2018
17701595	40A-N26		2.30 - 2.30	06/06/2018
17701601	40A-N26-V		2.60 - 2.60	06/06/2018
17701627	40A-O23		0.50 - 0.50	06/06/2018
17701637	40A-O23		1.00 - 1.00	06/06/2018
17701642	40A-O23		1.30 - 1.30	06/06/2018
17701646	40A-O25		0.50 - 0.50	06/06/2018
17701651	40A-O25		1.00 - 1.00	06/06/2018
17701657	40A-O25		2.00 - 2.00	06/06/2018
17701662	40A-O25		2.80 - 2.80	06/06/2018
17701667	40A-O25-V		3.00 - 3.00	06/06/2018
17701676	40A-Q24		0.50 - 0.50	06/06/2018
17701691	40A-Q24		1.00 - 1.00	06/06/2018
17701698	40A-Q24		2.00 - 2.00	06/06/2018
17701719	40A-Q27		0.20 - 0.20	06/06/2018
17701727	40A-Q27		0.70 - 0.70	06/06/2018
17701735	40A-Q27		1.20 - 1.20	06/06/2018
17701744	40A-Q27		1.90 - 1.90	06/06/2018
17701711	40A-Q24-V		2.10 - 2.10	06/06/2018
17701753	40A-Q27-V		2.00 - 2.00	06/06/2018
17701761	40A-R25		0.50 - 0.50	06/06/2018
17701771	40A-R25		1.00 - 1.00	06/06/2018
17701781	40A-R25-V		1.30 - 1.30	06/06/2018
17701792	40A-S27		0.20 - 0.20	06/06/2018
17701812	40A-S27		0.70 - 0.70	06/06/2018
17701818	40A-S27-V		0.80 - 0.80	06/06/2018

Maximum Sample/Coolbox Temperature (°C) :

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

13.4

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17701568			17701633			17701703			17701802			17701826			17701830			17701838
Customer Sample Reference			40A-G25			40A-G25			40A-G25			40A-G25			40A-G25-V			40A-L20			40A-L20
AGS Reference																					
Depth (m)			0.50 - 0.50			1.20 - 1.20			2.00 - 2.00			3.00 - 3.00			3.10 - 3.10			0.50 - 0.50			1.00 - 1.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 17		X						X									X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 33	X			X			X			X					X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41		X			X			X			X		X			X				X
Anions by Kone (soil)	All	NDPs: 0 Tests: 17		X						X								X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 17	X						X								X					
CEN Readings	All	NDPs: 0 Tests: 33	X			X			X			X					X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 74	X	X		X	X		X	X		X	X		X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 33	X			X			X			X					X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33	X			X			X			X					X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 41		X			X			X			X		X			X				X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33	X			X			X			X					X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 41		X			X			X			X		X			X				X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41			X			X			X			X		X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 33	X			X			X			X					X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 33	X			X			X			X					X			X		

17701575	40A-N26		0.50 - 0.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X
17701621	40A-N24		2.30 - 2.30	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X
17701617	40A-N24		1.70 - 1.70	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X
17701612	40A-N24		1.00 - 1.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X
17701606	40A-N24		0.50 - 0.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X
17701850	40A-L20-V		3.50 - 3.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
17701844	40A-L20		2.50 - 2.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X
17701838	40A-L20		1.00 - 1.00	60g VOC (ALE215)	S																X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | | |

17701575	40A-N26		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X				
				1kg TUB	S			X		X								X			
17701621	40A-N24		2.30 - 2.30	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X				
				1kg TUB	S			X		X								X			
17701617	40A-N24		1.70 - 1.70	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X				
				1kg TUB	S			X		X								X			
17701612	40A-N24		1.00 - 1.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X				
				1kg TUB	S			X		X								X			
17701606	40A-N24		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X				
				1kg TUB	S			X		X								X			
17701850	40A-L20-V		3.50 - 3.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X				
17701844	40A-L20		2.50 - 2.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X				
				1kg TUB	S			X		X								X			
17701838	40A-L20		1.00 - 1.00	60g VOC (ALE215)	S																X

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17701582			17701588			17701595			17701601			17701627			17701637			17701642	
Customer Sample Reference			40A-N26			40A-N26			40A-N26			40A-N26-V			40A-O23			40A-O23			40A-O23	
AGS Reference																						
Depth (m)			1.00 - 1.00			1.70 - 1.70			2.30 - 2.30			2.60 - 2.60			0.50 - 0.50			1.00 - 1.00			1.30 - 1.30	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 17		X						X								X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 33	X			X			X					X			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41		X			X			X		X			X			X				X
Anions by Kone (soil)	All	NDPs: 0 Tests: 17		X						X								X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 17	X						X								X					
CEN Readings	All	NDPs: 0 Tests: 33	X			X			X					X			X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 74	X	X		X	X		X	X		X		X	X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 33	X			X			X					X			X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33	X			X			X					X			X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 41		X			X			X		X			X			X				X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33	X			X			X					X			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 41		X			X			X		X			X			X				X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41			X			X			X		X			X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 33	X			X			X					X			X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 33	X			X			X					X			X			X		

17701691	40A-Q24		1.00 - 1.00	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X	
17701676	40A-Q24		0.50 - 0.50	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X	
17701667	40A-O25-V		3.00 - 3.00	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
17701662	40A-O25		2.80 - 2.80	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X	
17701657	40A-O25		2.00 - 2.00	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X	
17701651	40A-O25		1.00 - 1.00	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X	
17701646	40A-O25		0.50 - 0.50	60g VOC (ALE215)	S															X		
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X	
17701642	40A-O23		1.30 - 1.30	60g VOC (ALE215)	S															X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17701582			17701588			17701595			17701601		17701627			17701637			17701642
Customer Sample Reference			40A-N26			40A-N26			40A-N26			40A-N26-V		40A-O23			40A-O23			40A-O23
AGS Reference																				
Depth (m)			1.00 - 1.00			1.70 - 1.70			2.30 - 2.30			2.60 - 2.60		0.50 - 0.50			1.00 - 1.00			1.30 - 1.30
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 41		X			X			X		X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 41		X			X			X		X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 33	X			X			X					X			X			X	
pH	All	NDPs: 0 Tests: 41		X			X			X		X			X			X			X
pH Value	All	NDPs: 0 Tests: 33	X			X			X					X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41		X			X			X		X			X			X			X
Sample description	All	NDPs: 0 Tests: 41		X			X			X		X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 41		X			X			X		X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 17		X						X								X			
Total Sulphur	All	NDPs: 0 Tests: 17		X						X								X			
TPH CWG (W)	All	NDPs: 0 Tests: 33	X			X			X					X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 41		X			X			X		X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 41			X			X			X		X			X			X		

17701691	40A-Q24		1.00 - 1.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
				1kg TUB	S			X		X							X			
17701676	40A-Q24		0.50 - 0.50	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X		
				1kg TUB	S			X		X							X			
17701667	40A-O25-V		3.00 - 3.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
17701662	40A-O25		2.80 - 2.80	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
				1kg TUB	S			X		X							X			
17701657	40A-O25		2.00 - 2.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X		
				1kg TUB	S			X		X							X			
17701651	40A-O25		1.00 - 1.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
				1kg TUB	S			X		X							X			
17701646	40A-O25		0.50 - 0.50	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X		
				1kg TUB	S			X		X							X			
17701642	40A-O23		1.30 - 1.30	60g VOC (ALE215)	S															X

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | | |

17701818	40A-S27-V		0.80 - 0.80	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S			X				X			X		X						
17701812	40A-S27		0.70 - 0.70	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X	X		
17701792	40A-S27		0.20 - 0.20	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S			X				X			X		X						
				1kg TUB	S		X				X	X	X	X		X				X	X		
17701781	40A-R25-V		1.30 - 1.30	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S			X				X			X		X						
17701771	40A-R25		1.00 - 1.00	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X	X		
17701761	40A-R25		0.50 - 0.50	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S			X				X			X		X						
				1kg TUB	S		X				X	X	X	X		X				X	X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | | |

17701818	40A-S27-V		0.80 - 0.80	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
17701812	40A-S27		0.70 - 0.70	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X		
				1kg TUB	S			X		X						X			
17701792	40A-S27		0.20 - 0.20	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
				1kg TUB	S			X		X						X			
17701781	40A-R25-V		1.30 - 1.30	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
17701771	40A-R25		1.00 - 1.00	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X		X		
				1kg TUB	S			X		X						X			
17701761	40A-R25		0.50 - 0.50	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X				X		
				1kg TUB	S			X		X						X			

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17701568	40A-G25	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17701633	40A-G25	1.20 - 1.20	Dark Brown	Loamy Sand	Stones	Vegetation
17701703	40A-G25	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
17701802	40A-G25	3.00 - 3.00	Dark Brown	Sandy Loam	Stones	N/A
17701826	40A-G25-V	3.10 - 3.10	Dark Brown	Silty Clay Loam	Stones	Vegetation
17701830	40A-L20	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17701838	40A-L20	1.00 - 1.00	Dark Brown	Sand	Stones	N/A
17701844	40A-L20	2.50 - 2.50	Dark Brown	Sandy Loam	Stones	Brick
17701850	40A-L20-V	3.50 - 3.50	Dark Brown	Silty Clay Loam	Stones	Vegetation
17701606	40A-N24	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
17701612	40A-N24	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
17701617	40A-N24	1.70 - 1.70	Dark Brown	Loamy Sand	Stones	Vegetation
17701621	40A-N24	2.30 - 2.30	Dark Brown	Sandy Loam	Stones	Vegetation
17701575	40A-N26	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Brick
17701582	40A-N26	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Brick
17701588	40A-N26	1.70 - 1.70	Dark Brown	Loamy Sand	Stones	Brick
17701595	40A-N26	2.30 - 2.30	Dark Brown	Sandy Loam	Vegetation	Stones
17701601	40A-N26-V	2.60 - 2.60	Grey	Clay	None	None
17701627	40A-O23	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17701637	40A-O23	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Brick
17701642	40A-O23	1.30 - 1.30	Dark Brown	Sandy Loam	Stones	Brick
17701646	40A-O25	0.50 - 0.50	Dark Brown	Sand	Stones	None
17701651	40A-O25	1.00 - 1.00	Dark Brown	Silt Loam	Stones	None
17701657	40A-O25	2.00 - 2.00	Dark Brown	Silt Loam	Stones	None
17701662	40A-O25	2.80 - 2.80	Dark Brown	Loamy Sand	Stones	None
17701667	40A-O25-V	3.00 - 3.00	Grey	Silt Loam	Vegetation	None
17701676	40A-Q24	0.50 - 0.50	Grey	Loamy Sand	Stones	None
17701691	40A-Q24	1.00 - 1.00	Grey	Loamy Sand	Stones	None
17701698	40A-Q24	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	None
17701719	40A-Q27	0.20 - 0.20	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
17701727	40A-Q27	0.70 - 0.70	Dark Brown	Sandy Loam	Stones	None
17701735	40A-Q27	1.20 - 1.20	Dark Brown	Sandy Loam	Stones	None
17701744	40A-Q27	1.90 - 1.90	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
17701711	40A-Q24-V	2.10 - 2.10	Grey	Silt Loam	None	None
17701753	40A-Q27-V	2.00 - 2.00	Grey	Silty Clay	None	None
17701761	40A-R25	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
17701771	40A-R25	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
17701781	40A-R25-V	1.30 - 1.30	Grey	Silty Clay	Stones	None

			Colour	Description	Inclusions	Inclusions 2
17701792	40A-S27	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
17701812	40A-S27	0.70 - 0.70	Dark Brown	Sandy Loam	Stones	Vegetation
17701818	40A-S27-V	0.80 - 0.80	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G25	40A-G25	40A-G25	40A-G25	40A-G25-V	40A-L20
			Depth (m)	0.50 - 0.50	1.20 - 1.20	2.00 - 2.00	3.00 - 3.00	3.10 - 3.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701568	17701633	17701703	17701802	17701826	17701830
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6	21	6.9	12	31	4.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	86 M	440 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.617		0.581			0.22
Sulphate, Total potential	<0.06 %	TM132		1.85		1.74			0.66
Soil Organic Matter (SOM)	<0.35 %	TM132		4.86 #	48.6 #	8.33 #	8.33 #	3.52 #	3.07 #
pH	1 pH Units	TM133		9.61 M	8.14 M	10.8 M	8.7 M	7.36 M	9.02 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.48 M	5.59 M	1.85 M	6.65 M	11 M	2.45 M
Cadmium	<0.02 mg/kg	TM181		0.553 M	0.296 M	0.345 M	0.315 M	0.382 M	0.449 M
Chromium	<0.9 mg/kg	TM181		41.2 M	17.9 M	92 M	12.6 M	34.9 M	12.5 M
Copper	<1.4 mg/kg	TM181		15.4 M	31.4 M	9.14 M	25.2 M	25 M	8.2 M
Iron	<1000 mg/kg	TM181		24400 #	22900 #	38000 #	22400 #	31100 #	35400 #
Lead	<0.7 mg/kg	TM181		54.9 M	39.8 M	16.8 M	31.1 M	37 M	28.6 M
Manganese	<0.13 mg/kg	TM181		4560 M	1220 M	11800 M	1680 M	506 M	3310 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		10.9 M	27.1 M	6.33 M	23.5 M	31.6 M	6.74 M
Selenium	<1 mg/kg	TM181		3.46 #	1.59 #	6.91 #	1.8 #	1.22 #	2.79 #
Vanadium	<0.2 mg/kg	TM181		43 #	98.2 #	125 #	37.2 #	54.5 #	38.3 #
Zinc	<1.9 mg/kg	TM181		163 M	66.4 M	74.7 M	100 M	129 M	114 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.398		0.79			0.33
Calcium	<21 mg/kg	TM224		163000		176000			243000
Magnesium	<8 mg/kg	TM224		30200		27400			19100
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.138 M		0.153 M			0.0872 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L20	40A-L20	40A-L20-V	40A-N24	40A-N24	40A-N24
			Depth (m)	1.00 - 1.00	2.50 - 2.50	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701838	17701844	17701850	17701606	17701612	17701617
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	8.4	45	0.82	4.9	7.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	379 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0182 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0182 M	<0.01 M	0.0105 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.152			0.133	
Sulphate, Total potential	<0.06 %	TM132			0.456			0.399	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.57 #	3.69 #	12.5 #	1.78 #	1.39 #	1.1 #
pH	1 pH Units	TM133		8.74 M	8.35 M	6.59 M	9.03 M	8.89 M	10.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		16 M	11 M	22.3 M	5.13 M	8.26 M	3.84 M
Cadmium	<0.02 mg/kg	TM181		0.417 M	0.377 M	0.931 M	1.58 M	1.48 M	0.282 M
Chromium	<0.9 mg/kg	TM181		18.5 M	16.6 M	36.3 M	23.9 M	31.8 M	33.5 M
Copper	<1.4 mg/kg	TM181		30.5 M	24.8 M	31 M	27.4 M	43.3 M	6.56 M
Iron	<1000 mg/kg	TM181		33300 #	31500 #	20800 #	41700 #	26200 #	14400 #
Lead	<0.7 mg/kg	TM181		23.3 M	29.5 M	67 M	78.7 M	113 M	12.2 M
Manganese	<0.13 mg/kg	TM181		940 M	1990 M	272 M	3330 M	2980 M	4350 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		41.4 M	34 M	27.8 M	12.6 M	20.3 M	4.99 M
Selenium	<1 mg/kg	TM181		1.36 #	2.06 #	1.42 #	1.94 #	1.43 #	4.02 #
Vanadium	<0.2 mg/kg	TM181		44 #	35.4 #	56.9 #	53.2 #	56.9 #	84.9 #
Zinc	<1.9 mg/kg	TM181		104 M	106 M	176 M	268 M	298 M	50.1 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.211			0.0892	
Calcium	<21 mg/kg	TM224			50500			265000	
Magnesium	<8 mg/kg	TM224			7960			26700	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0562 M			0.0732 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N24	40A-N26	40A-N26	40A-N26	40A-N26	40A-N26-V
			Depth (m)	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	2.60 - 2.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701621	17701575	17701582	17701588	17701595	17701601
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		1.9	7.1	3.9	6.5	1.6	17
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	124 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.141		0.0364		0.179	
Sulphate, Total potential	<0.06 %	TM132		0.423		0.109		0.537	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.42 #	2.71 #	1.76 #	5 #	3.03 #	1.1 #
pH	1 pH Units	TM133		8.6 M	8.12 M	8.96 M	8.3 M	9.04 M	7.35 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.4 M	9.54 M	5.14 M	8.59 M	7.14 M	9.36 M
Cadmium	<0.02 mg/kg	TM181		0.943 M	0.673 M	0.194 M	0.383 M	0.92 M	0.239 M
Chromium	<0.9 mg/kg	TM181		19.5 M	44.7 M	11.1 M	9.15 M	80 M	30.6 M
Copper	<1.4 mg/kg	TM181		14.1 M	24.9 M	8.61 M	12 M	32.3 M	11.9 M
Iron	<1000 mg/kg	TM181		24300 #	46700 #	16300 #	20400 #	63100 #	30300 #
Lead	<0.7 mg/kg	TM181		59.9 M	42.4 M	11.7 M	16.2 M	67.6 M	28 M
Manganese	<0.13 mg/kg	TM181		3350 M	4100 M	742 M	519 M	8260 M	414 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		11 M	25.7 M	17.6 M	33.4 M	17.9 M	38.7 M
Selenium	<1 mg/kg	TM181		3.31 #	2.52 #	<1 #	<1 #	3.29 #	<1 #
Vanadium	<0.2 mg/kg	TM181		46 #	80.6 #	17.4 #	20.9 #	168 #	51.8 #
Zinc	<1.9 mg/kg	TM181		86.5 M	131 M	48.2 M	103 M	202 M	111 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.357		0.0329		0.227	
Calcium	<21 mg/kg	TM224		165000		74400		138000	
Magnesium	<8 mg/kg	TM224		35500		32600		31100	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.24 M		0.0147 M		0.0872 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O23	40A-O23	40A-O23	40A-O25	40A-O25	40A-O25
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701627	17701637	17701642	17701646	17701651	17701657
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.2	9.3	6	6.3	6	7.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.23		0.229		0.458
Sulphate, Total potential	<0.06 %	TM132			0.69		0.687		1.37
Soil Organic Matter (SOM)	<0.35 %	TM132		2.26 #	4.45 #	2.17 #	1.48 #	0.952 #	1.09 #
pH	1 pH Units	TM133		11.5 M	12 M	11 M	11.8 M	12 M	11.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.75 M	7.04 M	5.34 M	<6 M	6.22 M	<6 M
Cadmium	<0.02 mg/kg	TM181		1.62 M	1.5 M	1.33 M	0.796 M	0.88 M	0.743 M
Chromium	<0.9 mg/kg	TM181		29.4 M	31.8 M	82.5 M	292 M	273 M	155 M
Copper	<1.4 mg/kg	TM181		20.1 M	50.9 M	19.7 M	<14 M	40.2 M	21.5 M
Iron	<1000 mg/kg	TM181		36400 #	43700 #	22600 #	144000 #	148000 #	98900 #
Lead	<0.7 mg/kg	TM181		93.2 M	120 M	66 M	42.7 M	55 M	59.7 M
Manganese	<0.13 mg/kg	TM181		4720 M	4710 M	6990 M	21900 M	28100 M	15900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		10.7 M	15.1 M	14 M	7.67 M	11.4 M	18.7 M
Selenium	<1 mg/kg	TM181		3.16 #	3.24 #	2.74 #	<10 #	10.4 #	<10 #
Vanadium	<0.2 mg/kg	TM181		77.1 #	55.6 #	108 #	486 #	537 #	297 #
Zinc	<1.9 mg/kg	TM181		253 M	320 M	179 M	149 M	113 M	134 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.385		0.36		0.726
Calcium	<21 mg/kg	TM224			161000		198000		207000
Magnesium	<8 mg/kg	TM224			36300		36200		28600
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.144 M		0.0933 M		0.0651 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O25	40A-O25-V	40A-Q24	40A-Q24	40A-Q24	40A-Q27
			Depth (m)	2.80 - 2.80	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701662	17701667	17701676	17701691	17701698	17701719
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	43	12	14	12	8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	287 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.3		0.571	
Sulphate, Total potential	<0.06 %	TM132				0.9		1.71	
Soil Organic Matter (SOM)	<0.35 %	TM132		0.705 #	10.8 #	2.43 #	1.47 #	6.36 #	1.6 #
pH	1 pH Units	TM133		11.4 M	7.59 M	11 M	11.1 M	10.2 M	10.3 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		3.35 M	20.9 M	5.97 M	5.37 M	8.15 M	9.48 M
Cadmium	<0.02 mg/kg	TM181		0.447 M	0.74 M	0.448 M	0.573 M	0.547 M	0.732 M
Chromium	<0.9 mg/kg	TM181		49.2 M	33.8 M	283 M	155 M	162 M	266 M
Copper	<1.4 mg/kg	TM181		37.5 M	25.8 M	17.8 M	17.6 M	30.2 M	18.5 M
Iron	<1000 mg/kg	TM181		37500 #	18600 #	53300 #	66100 #	91600 #	160000 #
Lead	<0.7 mg/kg	TM181		39.2 M	50.3 M	47 M	34.5 M	67.7 M	45.7 M
Manganese	<0.13 mg/kg	TM181		6650 M	356 M	19300 M	15600 M	18200 M	25300 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		8.43 M	27.6 M	12.4 M	10.3 M	12.4 M	18.4 M
Selenium	<1 mg/kg	TM181		4.13 #	1.29 #	7.35 #	6.13 #	6.97 #	<10 #
Vanadium	<0.2 mg/kg	TM181		141 #	53.6 #	248 #	276 #	237 #	444 #
Zinc	<1.9 mg/kg	TM181		100 M	154 M	238 M	171 M	416 M	131 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.444		0.346	
Calcium	<21 mg/kg	TM224				161000		188000	
Magnesium	<8 mg/kg	TM224				16800		21500	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.192 M		0.153 M	

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-Q27	40A-Q27	40A-Q27	40A-Q24-V	40A-Q27-V	40A-R25
			Depth (m)	0.70 - 0.70	1.20 - 1.20	1.90 - 1.90	2.10 - 2.10	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701727	17701735	17701744	17701711	17701753	17701761
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8	8.9	5.3	26	24	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	72 M	184 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0264 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.193		0.184			
Sulphate, Total potential	<0.06 %	TM132		0.579		0.552			
Soil Organic Matter (SOM)	<0.35 %	TM132		<0.35 #	<0.35 #	<0.35 #	1.68 #	1.41 #	1.57 #
pH	1 pH Units	TM133		12.6 M	12.7 M	12.7 M	8.05 M	8.53 M	11.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	6.7 M	<6 M	9.48 M	12.8 M	8.82 M
Cadmium	<0.02 mg/kg	TM181		0.657 M	0.401 M	0.443 M	0.251 M	0.208 M	0.804 M
Chromium	<0.9 mg/kg	TM181		416 M	466 M	468 M	43.8 M	32.8 M	124 M
Copper	<1.4 mg/kg	TM181		14.9 M	<14 M	<14 M	15.2 M	13.6 M	49.8 M
Iron	<1000 mg/kg	TM181		177000 #	214000 #	226000 #	32300 #	30600 #	91300 #
Lead	<0.7 mg/kg	TM181		14.4 M	16.1 M	19.2 M	30.4 M	25.6 M	61.2 M
Manganese	<0.13 mg/kg	TM181		37600 M	39000 M	14.2 M	763 M	697 M	8530 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		5.34 M	2.99 M	<2 M	39.7 M	40.3 M	21.4 M
Selenium	<1 mg/kg	TM181		12.4 #	14.2 #	13.7 #	1.26 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		965 #	929 #	1020 #	72.2 #	57.8 #	183 #
Zinc	<1.9 mg/kg	TM181		36.2 M	24 M	33.9 M	116 M	104 M	116 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.276		0.261			
Calcium	<21 mg/kg	TM224		252000		255000			
Magnesium	<8 mg/kg	TM224		6760		7470			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0546 M		<0.004 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R25	40A-R25-V	40A-S27	40A-S27	40A-S27-V
			Depth (m)	1.00 - 1.00	1.30 - 1.30	0.20 - 0.20	0.70 - 0.70	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701771	17701781	17701792	17701812	17701818
			AGS Reference					
Moisture Content Ratio (% of as received sample)	%	PM024		13	25	17	12	29
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	57.7 M	31.6 M	<12 M	235 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.458			0.545	
Sulphate, Total potential	<0.06 %	TM132		1.37			1.64	
Soil Organic Matter (SOM)	<0.35 %	TM132		0.872 #	1.17 #	1.81 #	1.95 #	3.65 #
pH	1 pH Units	TM133		11.3 M	8.07 M	11.1 M	9.77 M	7.54 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.74 M	9.82 M	2.74 M	3.67 M	12.3 M
Cadmium	<0.02 mg/kg	TM181		0.242 M	0.245 M	0.253 M	0.263 M	0.509 M
Chromium	<0.9 mg/kg	TM181		52.3 M	31.7 M	105 M	50.1 M	26.3 M
Copper	<1.4 mg/kg	TM181		21.2 M	12.7 M	8.66 M	12.9 M	21.3 M
Iron	<1000 mg/kg	TM181		84900 #	34900 #	30100 #	28600 #	28000 #
Lead	<0.7 mg/kg	TM181		17.9 M	28.4 M	11.7 M	14.8 M	36.3 M
Manganese	<0.13 mg/kg	TM181		11600 M	739 M	7980 M	6120 M	735 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		8.1 M	37.7 M	7.21 M	10.9 M	29 M
Selenium	<1 mg/kg	TM181		4.75 #	1.13 #	5.06 #	4.38 #	1.02 #
Vanadium	<0.2 mg/kg	TM181		137 #	56.5 #	199 #	171 #	45.3 #
Zinc	<1.9 mg/kg	TM181		46.7 M	108 M	41 M	54.9 M	154 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.595			0.605	
Calcium	<21 mg/kg	TM224		161000			170000	
Magnesium	<8 mg/kg	TM224		12900			24700	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.17 M			0.246 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G25	40A-G25	40A-G25	40A-G25	40A-G25-V	40A-L20
			Depth (m)	0.50 - 0.50	1.20 - 1.20	2.00 - 2.00	3.00 - 3.00	3.10 - 3.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701568	17701633	17701703	17701802	17701826	17701830
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.6	68.3	94.9	72.4	91.1	91.6
Acenaphthene-d10 % recovery**	%	TM218		94.4	72.5	95.1	77.7	87.9	94.5
Phenanthrene-d10 % recovery**	%	TM218		94.9	60.9	96.6	74.1	91.7	95.3
Chrysene-d12 % recovery**	%	TM218		80.1	45.1	95.9	70	98	85.1
Perylene-d12 % recovery**	%	TM218		75.1	32.2	91.4	66	107	83.2
Naphthalene	<0.009 mg/kg	TM218		0.0747 M	0.0304 M	0.0579 M	0.0428 M	<0.009 M	0.0359 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0313 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	0.0188 M
Acenaphthene	<0.008 mg/kg	TM218		0.0308 M	<0.008 M	0.03 M	0.0124 M	<0.008 M	0.0121 M
Fluorene	<0.01 mg/kg	TM218		0.0414 M	0.0163 M	0.0333 M	0.0145 M	<0.01 M	0.0197 M
Phenanthrene	<0.015 mg/kg	TM218		0.274 M	0.0877 M	0.191 M	0.0733 M	<0.015 M	0.607 M
Anthracene	<0.016 mg/kg	TM218		0.0686 M	<0.016 M	0.0327 M	<0.016 M	<0.016 M	0.129 M
Fluoranthene	<0.017 mg/kg	TM218		0.407 M	0.0508 M	0.198 M	0.0553 M	<0.017 M	1.85 M
Pyrene	<0.015 mg/kg	TM218		0.375 M	0.0474 M	0.204 M	0.048 M	<0.015 M	1.41 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.225 M	0.0272 M	0.137 M	0.0343 M	<0.014 M	0.648 M
Chrysene	<0.01 mg/kg	TM218		0.256 M	0.0564 M	0.188 M	0.0569 M	<0.01 M	0.679 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.31 M	0.0485 M	0.234 M	0.0579 M	<0.015 M	0.574 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.135 M	<0.014 M	0.0835 M	0.0203 M	<0.014 M	0.292 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.252 M	0.0224 M	0.151 M	0.0303 M	<0.015 M	0.559 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.179 M	<0.018 M	0.139 M	0.0262 M	<0.018 M	0.317 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.045 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	0.084 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.205 M	<0.024 M	0.122 M	0.0275 M	<0.024 M	0.378 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2.91	0.387	1.8	0.5	<0.118	7.61

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L20	40A-L20	40A-L20-V	40A-N24	40A-N24	40A-N24
			Depth (m)	1.00 - 1.00	2.50 - 2.50	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701838	17701844	17701850	17701606	17701612	17701617
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.9	92.3	92.6	88.4	91.2	90.5
Acenaphthene-d10 % recovery**	%	TM218		93.3	84.7	94.7	94	95.3	92.3
Phenanthrene-d10 % recovery**	%	TM218		93	81.4	95.9	91.3	97.1	93
Chrysene-d12 % recovery**	%	TM218		79.9	73.7	90.4	81.2	80.4	82.2
Perylene-d12 % recovery**	%	TM218		74.1	73.3	86.3	80.9	81.1	79.3
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.0287 M	<0.009 M	<0.045 M	<0.045 M	0.0208 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.06 M	<0.06 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	0.024 M	<0.04 M	<0.04 M	0.0209 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.0634 M	<0.05 M	<0.05 M	0.102 M
Phenanthrene	<0.015 mg/kg	TM218		0.0286 M	0.121 M	0.197 M	0.184 M	0.0879 M	0.236 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.0313 M	0.149 M	<0.08 M	0.0374 M
Fluoranthene	<0.017 mg/kg	TM218		0.0469 M	0.0658 M	0.402 M	0.313 M	0.15 M	0.434 M
Pyrene	<0.015 mg/kg	TM218		0.0411 M	0.0515 M	0.335 M	0.308 M	0.195 M	0.434 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0268 M	0.0384 M	0.146 M	0.194 M	<0.07 M	0.181 M
Chrysene	<0.01 mg/kg	TM218		0.0273 M	0.0664 M	0.185 M	0.249 M	0.0754 M	0.19 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0332 M	0.0616 M	0.215 M	0.305 M	0.109 M	0.135 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.0186 M	0.0778 M	0.126 M	<0.07 M	0.0652 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0232 M	0.0359 M	0.15 M	0.188 M	0.0996 M	0.105 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.024 M	0.0962 M	0.169 M	0.0987 M	0.0495 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.115 M	<0.115 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	0.107 M	0.231 M	0.155 M	0.0635 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.227	0.512	2.03	2.42	0.97	2.07

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N24	40A-N26	40A-N26	40A-N26	40A-N26	40A-N26-V
			Depth (m)	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	2.60 - 2.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701621	17701575	17701582	17701588	17701595	17701601
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.7	85.1	94	92	85.9	92.8
Acenaphthene-d10 % recovery**	%	TM218		104	88.4	91.5	92.6	86.3	88.8
Phenanthrene-d10 % recovery**	%	TM218		102	92.3	91.8	94.4	84.1	89.5
Chrysene-d12 % recovery**	%	TM218		109	82.5	96.2	77.1	86.1	91.4
Perylene-d12 % recovery**	%	TM218		113	82.8	96.4	71.6	82.9	94
Naphthalene	<0.009 mg/kg	TM218		0.0225 M	0.0179 M	0.0262 M	0.0311 M	<0.045 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.06 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0357 M	<0.008 M	<0.008 M	<0.008 M	<0.04 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.153 M	<0.01 M	<0.01 M	<0.01 M	<0.05 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.296 M	0.0841 M	0.105 M	0.168 M	0.258 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.03 M	0.0209 M	0.0172 M	<0.016 M	<0.08 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.132 M	0.117 M	0.118 M	0.0757 M	0.585 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.166 M	0.107 M	0.115 M	0.0759 M	0.59 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0549 M	0.0615 M	0.0826 M	0.0412 M	0.434 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0614 M	0.0678 M	0.108 M	0.093 M	0.512 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0868 M	0.105 M	0.173 M	0.0793 M	0.828 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0296 M	0.0359 M	0.0571 M	0.0222 M	0.284 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0463 M	0.0634 M	0.0959 M	0.0342 M	0.446 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0508 M	0.0498 M	0.11 M	0.0283 M	0.386 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.115 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.128 M	0.0673 M	0.106 M	0.0427 M	0.353 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.29	0.797	1.11	0.692	4.68	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O23	40A-O23	40A-O23	40A-O25	40A-O25	40A-O25
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701627	17701637	17701642	17701646	17701651	17701657
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.3	85.1	88.8	92.2	92.8	93.6
Acenaphthene-d10 % recovery**	%	TM218		89.6	86.6	89.5	93.1	94.6	91.5
Phenanthrene-d10 % recovery**	%	TM218		90.7	88.7	86.8	93.7	95.7	92.9
Chrysene-d12 % recovery**	%	TM218		82.6	85.3	91.4	84.5	86.5	84.1
Perylene-d12 % recovery**	%	TM218		81.8	85	91.6	86	88	78.6
Naphthalene	<0.009 mg/kg	TM218		0.0472 M	0.0235 M	0.0374 M	<0.045 M	0.0183 M	0.0534 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	0.0197 M	<0.06 M	<0.012 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		0.0113 M	<0.008 M	0.0232 M	<0.04 M	0.0193 M	0.0555 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.0139 M	<0.05 M	<0.01 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		0.172 M	0.124 M	0.762 M	0.207 M	0.349 M	0.621 M
Anthracene	<0.016 mg/kg	TM218		0.0349 M	0.0282 M	0.11 M	<0.08 M	0.0508 M	0.112 M
Fluoranthene	<0.017 mg/kg	TM218		0.302 M	0.183 M	1.91 M	0.564 M	1 M	1.39 M
Pyrene	<0.015 mg/kg	TM218		0.299 M	0.17 M	1.44 M	0.516 M	0.921 M	1.46 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.163 M	0.116 M	0.726 M	0.23 M	0.466 M	0.662 M
Chrysene	<0.01 mg/kg	TM218		0.193 M	0.16 M	0.934 M	0.319 M	0.625 M	0.816 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.31 M	0.237 M	0.908 M	0.408 M	0.894 M	1.27 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0953 M	0.102 M	0.442 M	0.137 M	0.312 M	0.369 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.193 M	0.122 M	0.412 M	0.179 M	0.531 M	0.748 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.157 M	0.129 M	0.388 M	0.179 M	0.341 M	0.535 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0317 M	0.0266 M	0.0784 M	<0.115 M	0.0735 M	<0.115 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.202 M	0.142 M	0.369 M	0.228 M	0.487 M	0.711 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2.21	1.56	8.58	2.97	6.09	8.81

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O25	40A-O25-V	40A-Q24	40A-Q24	40A-Q24	40A-Q27
			Depth (m)	2.80 - 2.80	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701662	17701667	17701676	17701691	17701698	17701719
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97.2	95.6	88.3	92.4	91.4	88.2
Acenaphthene-d10 % recovery**	%	TM218		93	88.6	86.3	90.8	89.3	89.3
Phenanthrene-d10 % recovery**	%	TM218		92.6	91.9	92	93.1	91.5	92.2
Chrysene-d12 % recovery**	%	TM218		96.7	92.3	91.5	88.4	86.7	95.3
Perylene-d12 % recovery**	%	TM218		95.3	91.8	92.5	93.9	91.1	97.2
Naphthalene	<0.009 mg/kg	TM218		0.0365 M	<0.009 M	0.0249 M	0.0326 M	0.0444 M	0.0165 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	0.0133 M
Acenaphthene	<0.008 mg/kg	TM218		0.0198 M	<0.008 M	0.0108 M	<0.008 M	0.0126 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0195 M	<0.01 M	0.0115 M	<0.01 M	0.015 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.152 M	0.0715 M	0.122 M	0.0659 M	0.217 M	0.282 M
Anthracene	<0.016 mg/kg	TM218		0.0288 M	<0.016 M	0.0643 M	<0.016 M	0.1 M	0.0516 M
Fluoranthene	<0.017 mg/kg	TM218		0.239 M	0.108 M	1.18 M	0.131 M	0.422 M	0.68 M
Pyrene	<0.015 mg/kg	TM218		0.21 M	0.0862 M	1.42 M	0.282 M	0.6 M	0.618 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.101 M	0.0444 M	0.545 M	0.108 M	0.342 M	0.422 M
Chrysene	<0.01 mg/kg	TM218		0.133 M	0.0724 M	0.477 M	0.13 M	0.36 M	0.482 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.183 M	0.111 M	0.377 M	0.133 M	0.453 M	0.628 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0504 M	0.0292 M	0.202 M	0.0571 M	0.246 M	0.294 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0786 M	0.046 M	0.34 M	0.0776 M	0.329 M	0.31 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0658 M	0.051 M	0.188 M	0.0623 M	0.237 M	0.302 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	0.0462 M	<0.023 M	0.0557 M	0.0602 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0611 M	<0.024 M	0.215 M	0.0694 M	0.28 M	0.291 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.38	0.619	5.22	1.15	3.71	4.45

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-Q27	40A-Q27	40A-Q27	40A-Q24-V	40A-Q27-V	40A-R25
			Depth (m)	0.70 - 0.70	1.20 - 1.20	1.90 - 1.90	2.10 - 2.10	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701727	17701735	17701744	17701711	17701753	17701761
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.1	90.3	89.8	90.4	87.5	88.2
Acenaphthene-d10 % recovery**	%	TM218		88.1	94.8	93.5	86.6	57.4	95
Phenanthrene-d10 % recovery**	%	TM218		84.5	99.2	98.2	89.4	94.3	98.2
Chrysene-d12 % recovery**	%	TM218		89.3	94.7	90	89.3	93.1	90.2
Perylene-d12 % recovery**	%	TM218		93.1	90.5	84.7	95.4	88.6	85.1
Naphthalene	<0.009 mg/kg	TM218		0.0142 M	0.049 M	<0.009 M	0.0174 M	0.0197 M	0.0974 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0352 M	0.0782 M	<0.008 M	0.0149 M	<0.008 M	0.138 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0138 M	<0.01 M	<0.01 M	<0.01 M	0.0798 M
Phenanthrene	<0.015 mg/kg	TM218		0.525 M	0.471 M	0.229 M	0.143 M	<0.015 M	0.832 M
Anthracene	<0.016 mg/kg	TM218		0.0457 M	0.154 M	<0.016 M	0.029 M	<0.016 M	0.225 M
Fluoranthene	<0.017 mg/kg	TM218		0.83 M	1.07 M	0.18 M	0.174 M	<0.017 M	1.57 M
Pyrene	<0.015 mg/kg	TM218		0.742 M	0.883 M	0.144 M	0.179 M	<0.015 M	1.7 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.387 M	0.322 M	0.0547 M	0.0639 M	<0.014 M	0.913 M
Chrysene	<0.01 mg/kg	TM218		0.441 M	0.283 M	0.0628 M	0.0704 M	<0.01 M	0.944 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.416 M	0.267 M	0.086 M	0.0865 M	<0.015 M	1.24 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.178 M	0.111 M	0.0277 M	0.0289 M	<0.014 M	0.42 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.178 M	0.161 M	0.0509 M	0.0557 M	<0.015 M	0.88 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.187 M	0.117 M	0.0426 M	0.038 M	<0.018 M	0.566 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.038 M	0.0281 M	<0.023 M	<0.023 M	<0.023 M	0.116 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.163 M	0.11 M	0.0482 M	0.0502 M	<0.024 M	0.619 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		4.18	4.12	0.926	0.951	<0.118	10.3

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R25	40A-R25-V	40A-S27	40A-S27	40A-S27-V
			Depth (m)	1.00 - 1.00	1.30 - 1.30	0.20 - 0.20	0.70 - 0.70	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701771	17701781	17701792	17701812	17701818
			AGS Reference					
Naphthalene-d8 % recovery**	%	TM218		89.7	87.7	92.1	92.2	100
Acenaphthene-d10 % recovery**	%	TM218		92.2	90.4	89.8	42.4	88.5
Phenanthrene-d10 % recovery**	%	TM218		97.2	94.6	91.3	97.7	92.8
Chrysene-d12 % recovery**	%	TM218		86.8	92.4	96.9	93.6	94.8
Perylene-d12 % recovery**	%	TM218		89.8	87.6	95.1	88.3	93.7
Naphthalene	<0.009 mg/kg	TM218		0.143 M	0.0232 M	<0.009 M	0.011 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.223 M	0.0232 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.126 M	0.0145 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		1.21 M	0.135 M	0.0581 M	0.0648 M	0.0233 M
Anthracene	<0.016 mg/kg	TM218		0.269 M	0.0304 M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		2.16 M	0.201 M	0.0918 M	0.12 M	0.0411 M
Pyrene	<0.015 mg/kg	TM218		2.01 M	0.178 M	0.0797 M	0.0943 M	0.0329 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.07 M	0.112 M	0.0561 M	0.0719 M	0.0212 M
Chrysene	<0.01 mg/kg	TM218		1 M	0.124 M	0.0562 M	0.0754 M	0.0285 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.97 M	0.155 M	0.101 M	0.111 M	0.0456 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.438 M	0.0473 M	0.0344 M	0.0344 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.2 M	0.106 M	0.0565 M	0.0673 M	0.0213 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.611 M	0.0657 M	0.0517 M	0.0554 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.156 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.719 M	0.0736 M	0.0441 M	0.0538 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		12.3	1.29	0.63	0.759	0.214

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G25	40A-G25	40A-G25	40A-G25	40A-G25-V	40A-L20
			Depth (m)	0.50 - 0.50	1.20 - 1.20	2.00 - 2.00	3.00 - 3.00	3.10 - 3.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701568	17701633	17701703	17701802	17701826	17701830
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		79	47	77	49	93	84
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.561	2.33	2.6	2.39	<0.1	4.72
Aliphatics >C16-C21	<0.1 mg/kg	TM173		8.48	9.7	13.9	6.2	<0.1	19.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		46.8	61.3	60.8	21.4	1.25	143
Aliphatics >C35-C44	<0.1 mg/kg	TM173		6.79	20.9	13.9	7.01	<0.1	41.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		62.6	94.2	91.3	37	1.25	208
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.057	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.61	0.875	1.09	<0.1	<0.1	2.83
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.06	3.87	4.77	<0.1	<0.1	11.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		38.4	26.7	26.7	0.978	0.112	65.6
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		20.3	13.9	10.9	<0.1	0.549	37.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		8.11	5.29	3.9	<0.1	<0.1	15.4
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		69.3	45.3	43.5	0.978	0.661	118
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		132	140	135	38.1	1.91	326

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L20	40A-L20	40A-L20-V	40A-N24	40A-N24	40A-N24
			Depth (m)	1.00 - 1.00	2.50 - 2.50	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701838	17701844	17701850	17701606	17701612	17701617
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		106	83	85	90	81	90
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	2.56
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	0.0728	<0.04	<0.04	0.343
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	0.0455	<0.04	<0.04	1.16
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.32	5.8	<0.1	20	19	43.5
Aliphatics >C16-C21	<0.1 mg/kg	TM173		2.54	6.8	<0.1	62.1	116	100
Aliphatics >C21-C35	<0.1 mg/kg	TM173		8.97	6.89	2.02	216	577	86.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.87	1.7	<0.1	62.3	178	23
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		14.7	21.2	2.02	360	890	253
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	0.0491	<0.04	<0.04	0.229
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.776
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	0.98	2.49	3.85	4.74	15.8
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	3.36	2.38	21.5	49.3	35.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		2.54	7.36	37.3	97.2	242	39.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		5.7	6.44	4.16	73.3	115	26.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.21	3.4	0.521	32.4	47.5	12.6
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		8.24	18.1	46.3	196	412	117
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		22.9	39.3	48.5	556	1300	372

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N24	40A-N26	40A-N26	40A-N26	40A-N26	40A-N26-V
			Depth (m)	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	2.60 - 2.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701621	17701575	17701582	17701588	17701595	17701601
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89	87	89	80	84	101
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		5.45	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.54	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		2.7	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		107	35	1.81	3.06	3.43	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		233	41.1	9.98	5.38	16.3	0.157
Aliphatics >C21-C35	<0.1 mg/kg	TM173		257	50.6	60.6	21.5	118	1.02
Aliphatics >C35-C44	<0.1 mg/kg	TM173		55.8	10	42.8	2.58	30.7	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		652	137	115	32.6	168	1.18
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.36	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		1.8	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		41.4	5.29	0.687	1.7	1.09	1.66
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		108	17.4	4.27	6.82	6.41	1.59
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		102	34.9	48	17.4	54.8	3.74
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		28.7	15.7	62.8	2.96	31	0.636
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		9.87	6.29	30.7	<0.1	13.2	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		280	73.3	116	28.9	93.3	7.63
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		938	210	231	61.4	261	8.82

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O23	40A-O23	40A-O23	40A-O25	40A-O25	40A-O25
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701627	17701637	17701642	17701646	17701651	17701657
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97	108	86	89	97	83
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.044	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		4.14	4.7	2.4	87.9	1.19	7.85
Aliphatics >C16-C21	<0.1 mg/kg	TM173		16.7	17.9	8.71	279	20.8	32.5
Aliphatics >C21-C35	<0.1 mg/kg	TM173		62.8	79.5	34.7	859	166	199
Aliphatics >C35-C44	<0.1 mg/kg	TM173		22.3	47.9	9.45	145	42	58.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		106	150	55.3	1370	230	297
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.31	<0.1	1.81	8.1	1.41	1.22
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		5.19	<0.1	5.32	48.8	10.3	10.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		31.6	3.69	26.3	192	82.3	103
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		17.4	7.58	13.6	115	42	76
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		6.93	3.38	5.43	47.9	16.1	29.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		55.5	11.3	47.1	365	136	190
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		162	161	102	1740	366	488

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O25	40A-O25-V	40A-Q24	40A-Q24	40A-Q24	40A-Q27
			Depth (m)	2.80 - 2.80	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701662	17701667	17701676	17701691	17701698	17701719
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		96	83	93	86	96	109
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		0.484	<0.176	<0.176	0.235	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0515	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.196	0.049	<0.04	0.0644	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.17	0.854	8.26	8.23	5.08	0.407
Aliphatics >C16-C21	<0.1 mg/kg	TM173		6.64	<0.1	20.8	25.6	17.1	4.81
Aliphatics >C21-C35	<0.1 mg/kg	TM173		10.3	6	134	231	146	69
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.4	<0.1	32.2	50.5	35.9	29.8
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		23.5	6.85	196	315	204	104
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.13	<0.04	<0.04	0.0433	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.25	0.277	1.5	2.36	1.07	0.558
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.94	0.996	10.7	18	7.21	5.47
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		5.48	30.2	46.2	92.2	57.9	61.9
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.87	3.24	16.3	49.1	29.9	45.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	6.42	18.9	12.3	17.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		12.5	34.7	74.7	162	96.2	114
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		36.4	41.6	270	477	300	218

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-Q27	40A-Q27	40A-Q27	40A-Q24-V	40A-Q27-V	40A-R25
			Depth (m)	0.70 - 0.70	1.20 - 1.20	1.90 - 1.90	2.10 - 2.10	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701727	17701735	17701744	17701711	17701753	17701761
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		108	104	106	104	127	95
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	0.447
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0472
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.189
Aliphatics >C12-C16	<0.1 mg/kg	TM173		10.7	4.53	1.27	<0.1	0.166	39.5
Aliphatics >C16-C21	<0.1 mg/kg	TM173		20.9	13.9	3.01	0.335	<0.1	96.7
Aliphatics >C21-C35	<0.1 mg/kg	TM173		67.1	63.8	29.4	7.84	0.449	325
Aliphatics >C35-C44	<0.1 mg/kg	TM173		13.7	9.08	13.8	0.63	<0.1	87.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		112	91.3	47.4	8.81	0.615	549
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.125
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.56	0.814	1.21	0.602	<0.1	23.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		5.76	1.36	26.6	2.74	1.17	59.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	0.565	23.2	0.41	0.834	8.16
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	9.38	<0.1	0.21	1.76
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		9.32	2.74	51	3.75	2.01	91
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		122	94	98.4	12.6	2.62	641

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R25	40A-R25-V	40A-S27	40A-S27	40A-S27-V
			Depth (m)	1.00 - 1.00	1.30 - 1.30	0.20 - 0.20	0.70 - 0.70	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701771	17701781	17701792	17701812	17701818
			AGS Reference					
GRO Surrogate % recovery**	%	TM089		127	102	109	87	109
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		15.3	1.46	1.12	0.793	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		42.2	3.33	2.28	1.53	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		200	17.4	15.6	7.8	3.34
Aliphatics >C35-C44	<0.1 mg/kg	TM173		27.1	1.65	3.05	0.813	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		284	23.8	22	10.9	3.34
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		4.11	0.402	0.461	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		18.9	2.52	2.04	<0.1	1.28
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		60.5	11.2	15.3	4.59	17.8
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		15.3	1.95	4.34	1.07	3.21
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		5.63	<0.1	1.33	0.123	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		98.8	16	22.1	5.66	22.3
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		383	39.9	44.2	16.6	25.6

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G25	40A-G25	40A-G25	40A-G25	40A-G25-V	40A-L20
			Depth (m)	0.50 - 0.50	1.20 - 1.20	2.00 - 2.00	3.00 - 3.00	3.10 - 3.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018	05/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701568	17701633	17701703	17701802	17701826	17701830
			AGS Reference						
Dibromofluoromethane**	%	TM116		110	108	108	110	104	107
Toluene-d8**	%	TM116		96.1	92.7	95.5	92	96.8	97.1
4-Bromofluorobenzene**	%	TM116		90.4	74	89.9	75.2	96.7	91.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L20	40A-L20	40A-L20-V	40A-N24	40A-N24	40A-N24
			Depth (m)	1.00 - 1.00	2.50 - 2.50	3.50 - 3.50	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	05/06/2018	05/06/2018	05/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701838	17701844	17701850	17701606	17701612	17701617
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	108	107	107	114	114
Toluene-d8**	%	TM116		98.2	95.5	95.2	95.3	96.2	97.2
4-Bromofluorobenzene**	%	TM116		95.5	86	94	92.6	91	94.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N24	40A-N26	40A-N26	40A-N26	40A-N26	40A-N26-V
			Depth (m)	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	2.60 - 2.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701621	17701575	17701582	17701588	17701595	17701601
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	121	105	110	109	112
Toluene-d8**	%	TM116		95.4	97.6	98	95.7	96.4	97.9
4-Bromofluorobenzene**	%	TM116		87.1	96.3	83.9	84.8	89	95.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O23	40A-O23	40A-O23	40A-O25	40A-O25	40A-O25
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701627	17701637	17701642	17701646	17701651	17701657
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	104	111	109	108	103
Toluene-d8**	%	TM116		97.2	98.2	96.8	95.7	93.2	95.5
4-Bromofluorobenzene**	%	TM116		95.1	93.6	94.1	91.4	92.2	94.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O25	40A-O25-V	40A-Q24	40A-Q24	40A-Q24	40A-Q27
			Depth (m)	2.80 - 2.80	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.20 - 0.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701662	17701667	17701676	17701691	17701698	17701719
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	110	105	105	109	109
Toluene-d8**	%	TM116		97	94.7	96.9	98.2	97.7	97.2
4-Bromofluorobenzene**	%	TM116		93.4	90.6	94.6	98.8	95	95.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.147 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-Q27	40A-Q27	40A-Q27	40A-Q24-V	40A-Q27-V	40A-R25
			Depth (m)	0.70 - 0.70	1.20 - 1.20	1.90 - 1.90	2.10 - 2.10	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701727	17701735	17701744	17701711	17701753	17701761
			AGS Reference						
Dibromofluoromethane**	%	TM116		98.9	99.6	8.9	103	108	123
Toluene-d8**	%	TM116		97.9	97.8	94.9	97.2	97.7	97.6
4-Bromofluorobenzene**	%	TM116		97	97.5	98.7	98.9	97.2	95
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R25	40A-R25-V	40A-S27	40A-S27	40A-S27-V
			Depth (m)	1.00 - 1.00	1.30 - 1.30	0.20 - 0.20	0.70 - 0.70	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/06/2018	06/06/2018	06/06/2018	06/06/2018	06/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-17	180608-17	180608-17	180608-17	180608-17
			Lab Sample No.(s)	17701771	17701781	17701792	17701812	17701818
			AGS Reference					
Dibromofluoromethane**	%	TM116		106	110	109	138	104
Toluene-d8**	%	TM116		97.1	96.8	97.6	98.7	97.3
4-Bromofluorobenzene**	%	TM116		96.2	96.5	96.2	103	95.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-G25 0.50 - 0.50 SOLID 05/06/2018 00:00:00 08/06/2018 15:42:24 180608-17 17701568 TM048	18/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-G25 2.00 - 2.00 SOLID 05/06/2018 00:00:00 08/06/2018 15:40:21 180608-17 17701703 TM048	18/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-L20 0.50 - 0.50 SOLID 05/06/2018 00:00:00 08/06/2018 13:34:59 180608-17 17701830 TM048	18/06/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-L20 2.50 - 2.50 SOLID 05/06/2018 00:00:00 08/06/2018 13:33:24 180608-17 17701844 TM048	18/06/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-N24 1.00 - 1.00 SOLID 06/06/2018 00:00:00 08/06/2018 15:33:00 180608-17 17701612 TM048	18/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-N24 2.30 - 2.30 SOLID 06/06/2018 00:00:00 08/06/2018 13:53:21 180608-17 17701621 TM048	18/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180608-17 **Client Reference:** **Report Number:** 461660
Location: Llanwern **Order Number:** LLA443 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-N26 1.00 - 1.00 SOLID 06/06/2018 00:00:00 08/06/2018 14:04:06 180608-17 17701582 TM048	18/06/2018	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-N26 2.30 - 2.30 SOLID 06/06/2018 00:00:00 08/06/2018 13:50:38 180608-17 17701595 TM048	18/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-O23 1.00 - 1.00 SOLID 06/06/2018 00:00:00 08/06/2018 14:02:33 180608-17 17701637 TM048	18/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-O25 0.50 - 0.50 SOLID 06/06/2018 00:00:00 08/06/2018 15:26:24 180608-17 17701646 TM048	15/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-O25 2.00 - 2.00 SOLID 06/06/2018 00:00:00 08/06/2018 16:14:55 180608-17 17701657 TM048	15/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-Q24 0.50 - 0.50 SOLID 06/06/2018 00:00:00 08/06/2018 15:31:45 180608-17 17701676 TM048	15/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 180608-17 **Client Reference:** **Report Number:** 461660
Location: Llanwern **Order Number:** LLA443 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-Q24 2.00 - 2.00 SOLID 06/06/2018 00:00:00 08/06/2018 15:29:08 180608-17 17701698 TM048	15/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-Q27 0.70 - 0.70 SOLID 06/06/2018 00:00:00 08/06/2018 16:02:12 180608-17 17701727 TM048	18/06/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-Q27 1.90 - 1.90 SOLID 06/06/2018 00:00:00 08/06/2018 12:12:41 180608-17 17701744 TM048	18/06/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-R25 1.00 - 1.00 SOLID 06/06/2018 00:00:00 08/06/2018 15:09:01 180608-17 17701771 TM048	18/06/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-S27 0.70 - 0.70 SOLID 06/06/2018 00:00:00 08/06/2018 15:07:24 180608-17 17701812 TM048	18/06/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701568
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00353	<0.0005	0.0353	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00122	<0.001	0.0122	<0.01	-	-	-
Copper	0.00237	<0.0003	0.0237	<0.003	-	-	-
Lead	0.00389	<0.0002	0.0389	<0.002	-	-	-
Manganese	0.0216	<0.003	0.216	<0.03	-	-	-
Nickel	0.000622	<0.0004	0.00622	<0.004	-	-	-
Selenium	0.00484	<0.001	0.0484	<0.01	-	-	-
Vanadium	0.0467	<0.001	0.467	<0.01	-	-	-
Zinc	0.00688	<0.001	0.0688	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.172	<0.019	1.72	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000014	<0.00001	0.00014	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.58
Conductivity (µS/cm)	182.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701568
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.58
Conductivity (µS/cm)	182.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

25/06/2018 17:28:12

17:27:29 25/06/2018

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701575
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00491	<0.0005	0.0491	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00166	<0.0003	0.0166	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00972	<0.003	0.0972	<0.03	-	-	-
Nickel	0.000758	<0.0004	0.00758	<0.004	-	-	-
Selenium	0.00409	<0.001	0.0409	<0.01	-	-	-
Vanadium	0.0274	<0.001	0.274	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.307	<0.019	3.07	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000299	<0.000005	0.000299	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000181	<0.000005	0.000181	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000902	<0.000082	0.000902	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	6.66
Conductivity (µS/cm)	156.00
Temperature (°C)	21.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701575
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	6.66
Conductivity (µS/cm)	156.00
Temperature (°C)	21.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.06
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701582
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00628	<0.0005	0.0628	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00168	<0.0003	0.0168	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000953	<0.0004	0.00953	<0.004	-	-	-
Selenium	0.00281	<0.001	0.0281	<0.01	-	-	-
Vanadium	0.0419	<0.001	0.419	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000114	<0.00001	0.000114	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000826	<0.000005	0.0000826	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000982	<0.000005	0.0000982	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.71
Conductivity (µS/cm)	150.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.06
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701582
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.011	<0.01	0.11	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.011	<0.01	0.11	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.71
Conductivity (µS/cm)	150.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701588
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00275	<0.0005	0.0275	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00126	<0.001	0.0126	<0.01	-	-	-
Copper	0.00218	<0.0003	0.0218	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000633	<0.0004	0.00633	<0.004	-	-	-
Selenium	0.00184	<0.001	0.0184	<0.01	-	-	-
Vanadium	0.00502	<0.001	0.0502	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.353	<0.019	3.53	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000227	<0.000005	0.000227	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000295	<0.000005	0.000295	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.48
Conductivity (µS/cm)	130.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701588
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.48
Conductivity (µS/cm)	130.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	1.63
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.4
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701595
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	2.30 - 2.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00404	<0.0005	0.0404	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00235	<0.001	0.0235	<0.01	-	-	-
Copper	0.00475	<0.0003	0.0475	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000609	<0.0004	0.00609	<0.004	-	-	-
Selenium	0.0019	<0.001	0.019	<0.01	-	-	-
Vanadium	0.118	<0.001	1.18	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000018	<0.00001	0.00018	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000501	<0.000005	0.0000501	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000295	<0.000005	0.000295	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000126	<0.000002	0.000126	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000111	<0.000082	0.00111	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.76
Conductivity (µS/cm)	151.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	1.63
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.4
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701595
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N26
Depth (m)	2.30 - 2.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.013	<0.01	0.13	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	0.013	<0.01	0.13	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.028	<0.01	0.28	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.013	<0.01	0.13	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.76
Conductivity (µS/cm)	151.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	0.827
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.2
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701606
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00223	<0.0005	0.0223	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00178	<0.0003	0.0178	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000413	<0.0004	0.00413	<0.004	-	-	-
Selenium	0.0019	<0.001	0.019	<0.01	-	-	-
Vanadium	0.0286	<0.001	0.286	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000146	<0.00001	0.000146	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000282	<0.000005	0.000282	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000289	<0.000005	0.000289	<0.00005	-	-	-
Fluorene by GCMS	0.00000998	<0.000005	0.0000998	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000272	<0.000005	0.000272	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000143	<0.000002	0.000143	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000709	<0.000005	0.0000709	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000725	<0.000005	0.0000725	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000152	<0.000082	0.00152	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.05
Conductivity (µS/cm)	111.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	0.827
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.2
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701606
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.016	<0.01	0.16	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.05
Conductivity (µS/cm)	111.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701612
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00407	<0.0005	0.0407	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00137	<0.0003	0.0137	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000428	<0.0004	0.00428	<0.004	-	-	-
Selenium	0.00216	<0.001	0.0216	<0.01	-	-	-
Vanadium	0.0257	<0.001	0.257	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000368	<0.00001	0.000368	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000226	<0.000005	0.000226	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000767	<0.000005	0.000767	<0.00005	-	-	-
Anthracene by GCMS	0.00000907	<0.000005	0.0000907	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000422	<0.000005	0.000422	<0.00005	-	-	-
Fluorene by GCMS	0.0000277	<0.000005	0.000277	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000813	<0.000005	0.000813	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000296	<0.000082	0.00296	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	7.29
Conductivity (µS/cm)	121.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701612
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	7.29
Conductivity (µS/cm)	121.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701617
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000893	<0.0005	0.00893	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0013	<0.0003	0.013	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00355	<0.003	0.0355	<0.03	-	-	-
Nickel	0.000476	<0.0004	0.00476	<0.004	-	-	-
Selenium	0.00389	<0.001	0.0389	<0.01	-	-	-
Vanadium	0.127	<0.001	1.27	<0.01	-	-	-
Zinc	0.00101	<0.001	0.0101	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000258	<0.00001	0.00258	<0.0001	-	-	-
Acenaphthene by GCMS	0.00035	<0.000005	0.0035	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000668	<0.000005	0.000668	<0.00005	-	-	-
Fluoranthene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Anthracene by GCMS	0.0000531	<0.000005	0.000531	<0.00005	-	-	-
Phenanthrene by GCMS	0.00104	<0.000005	0.0104	<0.00005	-	-	-
Fluorene by GCMS	0.00108	<0.000005	0.0108	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000063	<0.000005	0.000063	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00312	<0.000082	0.0312	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.436	<0.05	4.36	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.01	<0.01	0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.28
Conductivity (µS/cm)	195.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701617
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.05	<0.01	0.5	<0.1	-	-	-
Aliphatics >C10-C12	0.201	<0.01	2.01	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.035	<0.01	0.35	<0.1	-	-	-
Aromatics >EC10-EC12	0.134	<0.01	1.34	<0.1	-	-	-
Aromatics >EC12-EC16	0.049	<0.01	0.49	<0.1	-	-	-
Aromatics >EC16-EC21	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.068	<0.01	0.68	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.504	<0.01	5.04	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.28
Conductivity (µS/cm)	195.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.892

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	1.94
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701621
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	2.30 - 2.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00245	<0.0005	0.0245	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00111	<0.0003	0.0111	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000439	<0.0004	0.00439	<0.004	-	-	-
Selenium	0.00551	<0.001	0.0551	<0.01	-	-	-
Vanadium	0.0681	<0.001	0.681	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000279	<0.00001	0.000279	<0.0001	-	-	-
Acenaphthene by GCMS	0.000566	<0.000005	0.00566	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Fluoranthene by GCMS	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Anthracene by GCMS	0.0000815	<0.000005	0.000815	<0.00005	-	-	-
Phenanthrene by GCMS	0.00128	<0.000005	0.0128	<0.00005	-	-	-
Fluorene by GCMS	0.00176	<0.000005	0.0176	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00411	<0.000082	0.0411	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.239	<0.05	2.39	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.75
Conductivity (µS/cm)	185.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	1.94
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701621
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-N24
Depth (m)	2.30 - 2.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.028	<0.01	0.28	<0.1	-	-	-
Aliphatics >C10-C12	0.108	<0.01	1.08	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics >EC10-EC12	0.072	<0.01	0.72	<0.1	-	-	-
Aromatics >EC12-EC16	0.1	<0.01	1	<0.1	-	-	-
Aromatics >EC16-EC21	0.051	<0.01	0.51	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.151	<0.01	1.51	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.39	<0.01	3.9	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.75
Conductivity (µS/cm)	185.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701627
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O23
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000952	<0.0005	0.00952	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00513	<0.001	0.0513	<0.01	-	-	-
Copper	0.0216	<0.0003	0.216	<0.003	-	-	-
Lead	0.00295	<0.0002	0.0295	<0.002	-	-	-
Manganese	0.00862	<0.003	0.0862	<0.03	-	-	-
Nickel	0.000842	<0.0004	0.00842	<0.004	-	-	-
Selenium	0.00241	<0.001	0.0241	<0.01	-	-	-
Vanadium	0.0219	<0.001	0.219	<0.01	-	-	-
Zinc	0.00535	<0.001	0.0535	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.367	<0.019	3.67	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000306	<0.00001	0.000306	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000889	<0.000005	0.0000889	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000404	<0.000005	0.000404	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000441	<0.000005	0.000441	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000377	<0.000005	0.000377	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000162	<0.000082	0.00162	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	768.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701627
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O23
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	768.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701633
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00727	<0.0005	0.0727	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000648	<0.0004	0.00648	<0.004	-	-	-
Selenium	0.00762	<0.001	0.0762	<0.01	-	-	-
Vanadium	0.0453	<0.001	0.453	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	7.09
Conductivity (µS/cm)	117.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701633
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	7.09
Conductivity (µS/cm)	117.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701637
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O23
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00111	<0.0005	0.0111	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00562	<0.001	0.0562	<0.01	-	-	-
Copper	0.00967	<0.0003	0.0967	<0.003	-	-	-
Lead	0.00139	<0.0002	0.0139	<0.002	-	-	-
Manganese	0.00534	<0.003	0.0534	<0.03	-	-	-
Nickel	0.000615	<0.0004	0.00615	<0.004	-	-	-
Selenium	0.0027	<0.001	0.027	<0.01	-	-	-
Vanadium	0.0391	<0.001	0.391	<0.01	-	-	-
Zinc	0.00277	<0.001	0.0277	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.295	<0.019	2.95	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000397	<0.00001	0.000397	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000213	<0.000005	0.000213	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Anthracene by GCMS	0.000007	<0.000005	0.00007	<0.00005	-	-	-
Phenanthrene by GCMS	0.000152	<0.000005	0.00152	<0.00005	-	-	-
Fluorene by GCMS	0.00000798	<0.000005	0.0000798	<0.00005	-	-	-
Chrysene by GCMS	0.0000057	<0.000005	0.000057	<0.00005	-	-	-
Pyrene by GCMS	0.0000865	<0.000005	0.000865	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000768	<0.000005	0.0000768	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000101	<0.000002	0.000101	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000453	<0.000082	0.00453	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.02
Conductivity (µS/cm)	336.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701637
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O23
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.011	<0.01	0.11	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.012	<0.01	0.12	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.02
Conductivity (µS/cm)	336.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.6
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701642
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O23
Depth (m)	1.30 - 1.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000103	<0.00001	0.000103	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00391	<0.0005	0.0391	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00258	<0.001	0.0258	<0.01	-	-	-
Copper	0.0131	<0.0003	0.131	<0.003	-	-	-
Lead	0.00109	<0.0002	0.0109	<0.002	-	-	-
Manganese	0.00708	<0.003	0.0708	<0.03	-	-	-
Nickel	0.00102	<0.0004	0.0102	<0.004	-	-	-
Selenium	0.00342	<0.001	0.0342	<0.01	-	-	-
Vanadium	0.111	<0.001	1.11	<0.01	-	-	-
Zinc	0.00169	<0.001	0.0169	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.835	<0.019	8.35	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000225	<0.00001	0.000225	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000277	<0.000005	0.000277	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000148	<0.000005	0.000148	<0.00005	-	-	-
Anthracene by GCMS	0.00000527	<0.000005	0.0000527	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000445	<0.000005	0.000445	<0.00005	-	-	-
Fluorene by GCMS	0.00000539	<0.000005	0.0000539	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000507	<0.000002	0.0000507	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000148	<0.000082	0.00148	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.90
Conductivity (µS/cm)	286.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.6
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701642
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O23
Depth (m)	1.30 - 1.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.90
Conductivity (µS/cm)	286.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701646
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00713	<0.001	0.0713	<0.01	-	-	-
Copper	0.00553	<0.0003	0.0553	<0.003	-	-	-
Lead	0.00059	<0.0002	0.0059	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00122	<0.001	0.0122	<0.01	-	-	-
Vanadium	0.00527	<0.001	0.0527	<0.01	-	-	-
Zinc	0.00115	<0.001	0.0115	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000384	<0.00001	0.000384	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000195	<0.000005	0.00195	<0.00005	-	-	-
Anthracene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Phenanthrene by GCMS	0.000272	<0.000005	0.00272	<0.00005	-	-	-
Fluorene by GCMS	0.00000534	<0.000005	0.0000534	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000673	<0.000082	0.00673	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.91
Conductivity (µS/cm)	1,690.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701646
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.91
Conductivity (µS/cm)	1,690.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701651
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00713	<0.001	0.0713	<0.01	-	-	-
Copper	0.00471	<0.0003	0.0471	<0.003	-	-	-
Lead	0.00083	<0.0002	0.0083	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0047	<0.001	0.047	<0.01	-	-	-
Zinc	0.00402	<0.001	0.0402	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000102	<0.00001	0.00102	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000583	<0.000005	0.000583	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000321	<0.000005	0.00321	<0.00005	-	-	-
Anthracene by GCMS	0.0000222	<0.000005	0.000222	<0.00005	-	-	-
Phenanthrene by GCMS	0.000613	<0.000005	0.00613	<0.00005	-	-	-
Fluorene by GCMS	0.00000692	<0.000005	0.0000692	<0.00005	-	-	-
Chrysene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Pyrene by GCMS	0.000216	<0.000005	0.00216	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000157	<0.000005	0.000157	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00137	<0.000082	0.0137	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.84
Conductivity (µS/cm)	1,880.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701651
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.84
Conductivity (µS/cm)	1,880.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701657
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	24.3	<0.2	243	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00743	<0.001	0.0743	<0.01	-	-	-
Copper	0.00194	<0.0003	0.0194	<0.003	-	-	-
Lead	0.0016	<0.0002	0.016	<0.002	-	-	-
Manganese	0.0229	<0.003	0.229	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00639	<0.001	0.0639	<0.01	-	-	-
Zinc	0.00285	<0.001	0.0285	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.712	<0.019	7.12	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00025	<0.00001	0.0025	<0.0001	-	-	-
Acenaphthene by GCMS	0.00016	<0.000005	0.0016	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Fluoranthene by GCMS	0.000245	<0.000005	0.00245	<0.00005	-	-	-
Anthracene by GCMS	0.000056	<0.000005	0.00056	<0.00005	-	-	-
Phenanthrene by GCMS	0.000482	<0.000005	0.00482	<0.00005	-	-	-
Fluorene by GCMS	0.000147	<0.000005	0.00147	<0.00005	-	-	-
Chrysene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Pyrene by GCMS	0.000251	<0.000005	0.00251	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000106	<0.000005	0.000106	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000726	<0.000005	0.0000726	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00164	<0.000082	0.0164	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,560.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701657
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.013	<0.01	0.13	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,560.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701662
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	2.80 - 2.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00117	<0.001	0.0117	<0.01	-	-	-
Copper	0.00194	<0.0003	0.0194	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000551	<0.0004	0.00551	<0.004	-	-	-
Selenium	0.00174	<0.001	0.0174	<0.01	-	-	-
Vanadium	0.0307	<0.001	0.307	<0.01	-	-	-
Zinc	0.00105	<0.001	0.0105	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000117	<0.00001	0.00117	<0.0001	-	-	-
Acenaphthene by GCMS	0.000543	<0.000005	0.00543	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000275	<0.000005	0.000275	<0.00005	-	-	-
Fluoranthene by GCMS	0.000189	<0.000005	0.00189	<0.00005	-	-	-
Anthracene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Phenanthrene by GCMS	0.000913	<0.000005	0.00913	<0.00005	-	-	-
Fluorene by GCMS	0.000331	<0.000005	0.00331	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00236	<0.000082	0.0236	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.36
Conductivity (µS/cm)	692.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701662
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-O25
Depth (m)	2.80 - 2.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.36
Conductivity (µS/cm)	692.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701676
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q24
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.248	<0.2	2.48	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0027	<0.0005	0.027	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00346	<0.0003	0.0346	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000684	<0.0004	0.00684	<0.004	-	-	-
Selenium	0.0014	<0.001	0.014	<0.01	-	-	-
Vanadium	0.0731	<0.001	0.731	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000028	<0.00001	0.00028	<0.0001	-	-	-
Acenaphthene by GCMS	0.000218	<0.000005	0.00218	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000727	<0.000005	0.00727	<0.00005	-	-	-
Anthracene by GCMS	0.0000611	<0.000005	0.000611	<0.00005	-	-	-
Phenanthrene by GCMS	0.000173	<0.000005	0.00173	<0.00005	-	-	-
Fluorene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Chrysene by GCMS	0.0000311	<0.000005	0.000311	<0.00005	-	-	-
Pyrene by GCMS	0.00071	<0.000005	0.0071	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000317	<0.000005	0.000317	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00199	<0.000082	0.0199	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.76
Conductivity (µS/cm)	295.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701676
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q24
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.76
Conductivity (µS/cm)	295.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701691
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q24
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.882	<0.2	8.82	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00588	<0.0005	0.0588	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00336	<0.0003	0.0336	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000745	<0.0004	0.00745	<0.004	-	-	-
Selenium	0.00175	<0.001	0.0175	<0.01	-	-	-
Vanadium	0.0808	<0.001	0.808	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000355	<0.00001	0.000355	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000722	<0.000005	0.000722	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000253	<0.000005	0.00253	<0.00005	-	-	-
Anthracene by GCMS	0.0000575	<0.000005	0.000575	<0.00005	-	-	-
Phenanthrene by GCMS	0.000216	<0.000005	0.00216	<0.00005	-	-	-
Fluorene by GCMS	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Chrysene by GCMS	0.0000253	<0.000005	0.000253	<0.00005	-	-	-
Pyrene by GCMS	0.000363	<0.000005	0.00363	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000235	<0.000005	0.000235	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000716	<0.000005	0.0000716	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00107	<0.000082	0.0107	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.58
Conductivity (µS/cm)	274.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701691
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q24
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.58
Conductivity (µS/cm)	274.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701698
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q24
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000941	<0.0005	0.00941	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00101	<0.001	0.0101	<0.01	-	-	-
Copper	0.00211	<0.0003	0.0211	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000586	<0.0004	0.00586	<0.004	-	-	-
Selenium	0.00139	<0.001	0.0139	<0.01	-	-	-
Vanadium	0.065	<0.001	0.65	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000411	<0.00001	0.000411	<0.0001	-	-	-
Acenaphthene by GCMS	0.000335	<0.000005	0.00335	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000692	<0.000005	0.0000692	<0.00005	-	-	-
Fluoranthene by GCMS	0.000453	<0.000005	0.00453	<0.00005	-	-	-
Anthracene by GCMS	0.0000731	<0.000005	0.000731	<0.00005	-	-	-
Phenanthrene by GCMS	0.000272	<0.000005	0.00272	<0.00005	-	-	-
Fluorene by GCMS	0.0000371	<0.000005	0.000371	<0.00005	-	-	-
Chrysene by GCMS	0.0000347	<0.000005	0.000347	<0.00005	-	-	-
Pyrene by GCMS	0.00047	<0.000005	0.0047	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000343	<0.000005	0.000343	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000666	<0.000005	0.0000666	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000711	<0.000002	0.0000711	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000782	<0.000005	0.0000782	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000556	<0.000005	0.0000556	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0018	<0.000082	0.018	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.48
Conductivity (µS/cm)	232.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701698
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q24
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.48
Conductivity (µS/cm)	232.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701703
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000284	<0.00001	0.000284	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000778	<0.0005	0.00778	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00216	<0.001	0.0216	<0.01	-	-	-
Copper	0.00132	<0.0003	0.0132	<0.003	-	-	-
Lead	0.00164	<0.0002	0.0164	<0.002	-	-	-
Manganese	0.0341	<0.003	0.341	<0.03	-	-	-
Nickel	0.000425	<0.0004	0.00425	<0.004	-	-	-
Selenium	0.00403	<0.001	0.0403	<0.01	-	-	-
Vanadium	0.0412	<0.001	0.412	<0.01	-	-	-
Zinc	0.00561	<0.001	0.0561	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.7	<0.019	7	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000653	<0.000005	0.0000653	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.90
Conductivity (µS/cm)	339.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701703
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.01	<0.01	0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.90
Conductivity (µS/cm)	339.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701719
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000129	<0.00001	0.000129	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000965	<0.0005	0.00965	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00587	<0.001	0.0587	<0.01	-	-	-
Copper	0.00526	<0.0003	0.0526	<0.003	-	-	-
Lead	0.00028	<0.0002	0.0028	<0.002	-	-	-
Manganese	0.00689	<0.003	0.0689	<0.03	-	-	-
Nickel	0.0005	<0.0004	0.005	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0242	<0.001	0.242	<0.01	-	-	-
Zinc	0.00773	<0.001	0.0773	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0192	<0.019	0.192	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000639	<0.0002	0.00639	<0.002	-	-	-
Acenaphthene by GCMS	0.000818	<0.0001	0.00818	<0.001	-	-	-
Acenaphthylene by GCMS	0.000158	<0.0001	0.00158	<0.001	-	-	-
Fluoranthene by GCMS	0.0238	<0.0001	0.238	<0.001	-	-	-
Anthracene by GCMS	0.00676	<0.0001	0.0676	<0.001	-	-	-
Phenanthrene by GCMS	0.112	<0.0001	1.12	<0.001	-	-	-
Fluorene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Chrysene by GCMS	0.000658	<0.0001	0.00658	<0.001	-	-	-
Pyrene by GCMS	0.0156	<0.0001	0.156	<0.001	-	-	-
Benz(a)anthracene by GCMS	0.00112	<0.0001	0.0112	<0.001	-	-	-
Benzo(b)fluoranthene by GCMS	0.000325	<0.0001	0.00325	<0.001	-	-	-
Benzo(k)fluoranthene by GCMS	0.000196	<0.0001	0.00196	<0.001	-	-	-
Benzo(a)pyrene by GCMS	0.000165	<0.00004	0.00165	<0.0004	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000118	<0.0001	0.00118	<0.001	-	-	-
Benzo(ghi)perylene by GCMS	0.000139	<0.0001	0.00139	<0.001	-	-	-
Indeno(123cd)pyrene by GCMS	0.000125	<0.0001	0.00125	<0.001	-	-	-
PAH 16 EPA Total by GCMS	0.163	<0.00164	1.63	<0.0164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.81
Conductivity (µS/cm)	1,420.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701719
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.058	<0.01	0.58	<0.1	-	-	-
Aromatics >EC16-EC21	0.294	<0.01	2.94	<0.1	-	-	-
Aromatics >EC21-EC35	0.016	<0.01	0.16	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.368	<0.01	3.68	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.368	<0.01	3.68	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.81
Conductivity (µS/cm)	1,420.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701727
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.221	<0.2	2.21	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00277	<0.0005	0.0277	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00108	<0.001	0.0108	<0.01	-	-	-
Copper	0.00535	<0.0003	0.0535	<0.003	-	-	-
Lead	0.00166	<0.0002	0.0166	<0.002	-	-	-
Manganese	0.0479	<0.003	0.479	<0.03	-	-	-
Nickel	0.00163	<0.0004	0.0163	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00227	<0.001	0.0227	<0.01	-	-	-
Zinc	0.00333	<0.001	0.0333	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.146	<0.019	1.46	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00123	<0.00001	0.0123	<0.0001	-	-	-
Acenaphthene by GCMS	0.00233	<0.000005	0.0233	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000217	<0.000005	0.000217	<0.00005	-	-	-
Fluoranthene by GCMS	0.00334	<0.000005	0.0334	<0.00005	-	-	-
Anthracene by GCMS	0.000834	<0.000005	0.00834	<0.00005	-	-	-
Phenanthrene by GCMS	0.0084	<0.000005	0.084	<0.00005	-	-	-
Fluorene by GCMS	0.000344	<0.000005	0.00344	<0.00005	-	-	-
Chrysene by GCMS	0.000166	<0.000005	0.00166	<0.00005	-	-	-
Pyrene by GCMS	0.00235	<0.000005	0.0235	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000201	<0.000005	0.00201	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000423	<0.000005	0.000423	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000106	<0.000002	0.000106	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0193	<0.000082	0.193	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	12.23
Conductivity (µS/cm)	5,590.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701727
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC16-EC21	0.027	<0.01	0.27	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.043	<0.01	0.43	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.06	<0.01	0.6	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	12.23
Conductivity (µS/cm)	5,590.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701735
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000567	<0.0005	0.00567	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00137	<0.001	0.0137	<0.01	-	-	-
Copper	0.00276	<0.0003	0.0276	<0.003	-	-	-
Lead	0.002	<0.0002	0.02	<0.002	-	-	-
Manganese	0.0244	<0.003	0.244	<0.03	-	-	-
Nickel	0.000846	<0.0004	0.00846	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00144	<0.001	0.0144	<0.01	-	-	-
Zinc	0.00246	<0.001	0.0246	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.487	<0.019	4.87	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000714	<0.00001	0.00714	<0.0001	-	-	-
Acenaphthene by GCMS	0.00167	<0.000005	0.0167	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Fluoranthene by GCMS	0.0032	<0.000005	0.032	<0.00005	-	-	-
Anthracene by GCMS	0.000774	<0.000005	0.00774	<0.00005	-	-	-
Phenanthrene by GCMS	0.00652	<0.000005	0.0652	<0.00005	-	-	-
Fluorene by GCMS	0.000269	<0.000005	0.00269	<0.00005	-	-	-
Chrysene by GCMS	0.000147	<0.000005	0.00147	<0.00005	-	-	-
Pyrene by GCMS	0.00229	<0.000005	0.0229	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000181	<0.000005	0.00181	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000399	<0.000005	0.000399	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000154	<0.000005	0.000154	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000103	<0.000002	0.000103	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0158	<0.000082	0.158	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	12.23
Conductivity (µS/cm)	5,720.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701735
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.033	<0.01	0.33	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.033	<0.01	0.33	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.049	<0.01	0.49	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	12.23
Conductivity (µS/cm)	5,720.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.7
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701744
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	1.90 - 1.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000653	<0.0005	0.00653	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0104	<0.001	0.104	<0.01	-	-	-
Copper	0.00309	<0.0003	0.0309	<0.003	-	-	-
Lead	0.00444	<0.0002	0.0444	<0.002	-	-	-
Manganese	0.0408	<0.003	0.408	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00227	<0.001	0.0227	<0.01	-	-	-
Zinc	0.00616	<0.001	0.0616	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.883	<0.019	8.83	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000677	<0.00001	0.000677	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000256	<0.000005	0.000256	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000195	<0.000005	0.00195	<0.00005	-	-	-
Anthracene by GCMS	0.000024	<0.000005	0.00024	<0.00005	-	-	-
Phenanthrene by GCMS	0.0005	<0.000005	0.005	<0.00005	-	-	-
Fluorene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
Chrysene by GCMS	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Pyrene by GCMS	0.00015	<0.000005	0.0015	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000591	<0.000005	0.0000591	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000995	<0.000082	0.00995	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	12.37
Conductivity (µS/cm)	7,020.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.7
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701744
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-Q27
Depth (m)	1.90 - 1.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	12.37
Conductivity (µS/cm)	7,020.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701761
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-R25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.17	<0.2	11.7	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00126	<0.0005	0.0126	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00111	<0.001	0.0111	<0.01	-	-	-
Copper	0.0084	<0.0003	0.084	<0.003	-	-	-
Lead	0.000521	<0.0002	0.00521	<0.002	-	-	-
Manganese	0.00732	<0.003	0.0732	<0.03	-	-	-
Nickel	0.00134	<0.0004	0.0134	<0.004	-	-	-
Selenium	0.00377	<0.001	0.0377	<0.01	-	-	-
Vanadium	0.0832	<0.001	0.832	<0.01	-	-	-
Zinc	0.00273	<0.001	0.0273	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0613	<0.019	0.613	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00014	<0.00001	0.0014	<0.0001	-	-	-
Acenaphthene by GCMS	0.000388	<0.000005	0.00388	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00056	<0.000005	0.0056	<0.00005	-	-	-
Anthracene by GCMS	0.0000993	<0.000005	0.000993	<0.00005	-	-	-
Phenanthrene by GCMS	0.000482	<0.000005	0.00482	<0.00005	-	-	-
Fluorene by GCMS	0.000157	<0.000005	0.00157	<0.00005	-	-	-
Chrysene by GCMS	0.0000718	<0.000005	0.000718	<0.00005	-	-	-
Pyrene by GCMS	0.000874	<0.000005	0.00874	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000526	<0.000005	0.000526	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000616	<0.000002	0.0000616	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00285	<0.000082	0.0285	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.06
Conductivity (µS/cm)	508.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701761
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-R25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.06
Conductivity (µS/cm)	508.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701771
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-R25
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00111	<0.0005	0.0111	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00471	<0.0003	0.0471	<0.003	-	-	-
Lead	0.000422	<0.0002	0.00422	<0.002	-	-	-
Manganese	0.00605	<0.003	0.0605	<0.03	-	-	-
Nickel	0.00159	<0.0004	0.0159	<0.004	-	-	-
Selenium	0.0099	<0.001	0.099	<0.01	-	-	-
Vanadium	0.0831	<0.001	0.831	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.265	<0.019	2.65	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00019	<0.00001	0.0019	<0.0001	-	-	-
Acenaphthene by GCMS	0.000728	<0.000005	0.00728	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000978	<0.000005	0.0000978	<0.00005	-	-	-
Fluoranthene by GCMS	0.00104	<0.000005	0.0104	<0.00005	-	-	-
Anthracene by GCMS	0.000254	<0.000005	0.00254	<0.00005	-	-	-
Phenanthrene by GCMS	0.00117	<0.000005	0.0117	<0.00005	-	-	-
Fluorene by GCMS	0.000241	<0.000005	0.00241	<0.00005	-	-	-
Chrysene by GCMS	0.0000524	<0.000005	0.000524	<0.00005	-	-	-
Pyrene by GCMS	0.000851	<0.000005	0.00851	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000438	<0.000005	0.000438	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000531	<0.000002	0.0000531	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0046	<0.000082	0.046	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.19
Conductivity (µS/cm)	627.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701771
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-R25
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.19
Conductivity (µS/cm)	627.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701792
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-S27
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	22.5	<0.2	225	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00798	<0.0005	0.0798	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00184	<0.001	0.0184	<0.01	-	-	-
Copper	0.00492	<0.0003	0.0492	<0.003	-	-	-
Lead	0.000244	<0.0002	0.00244	<0.002	-	-	-
Manganese	0.00495	<0.003	0.0495	<0.03	-	-	-
Nickel	0.00161	<0.0004	0.0161	<0.004	-	-	-
Selenium	0.0044	<0.001	0.044	<0.01	-	-	-
Vanadium	0.118	<0.001	1.18	<0.01	-	-	-
Zinc	0.00306	<0.001	0.0306	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.306	<0.019	3.06	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000719	<0.000005	0.0000719	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000901	<0.000005	0.0000901	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000871	<0.000005	0.0000871	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.67
Conductivity (µS/cm)	405.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701792
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-S27
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	10.67
Conductivity (µS/cm)	405.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701802
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.64	<0.2	16.4	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00653	<0.0005	0.0653	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000794	<0.0003	0.00794	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00475	<0.003	0.0475	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00559	<0.001	0.0559	<0.01	-	-	-
Vanadium	0.0621	<0.001	0.621	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000573	<0.000005	0.0000573	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000515	<0.000005	0.0000515	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000006	<0.000005	0.00006	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.25
Conductivity (µS/cm)	189.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701802
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-G25
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.01	<0.01	0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.25
Conductivity (µS/cm)	189.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701812
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-S27
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00871	<0.0005	0.0871	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00135	<0.0003	0.0135	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00109	<0.0004	0.0109	<0.004	-	-	-
Selenium	0.00235	<0.001	0.0235	<0.01	-	-	-
Vanadium	0.0763	<0.001	0.763	<0.01	-	-	-
Zinc	0.0067	<0.001	0.067	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.496	<0.019	4.96	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000974	<0.000005	0.0000974	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000985	<0.000005	0.0000985	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000916	<0.000005	0.0000916	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.16
Conductivity (µS/cm)	247.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701812
Sampled Date	06-Jun-2018
Customer Sample Ref.	40A-S27
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.16
Conductivity (µS/cm)	247.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701830
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-L20
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00208	<0.0005	0.0208	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000682	<0.0003	0.00682	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00235	<0.001	0.0235	<0.01	-	-	-
Vanadium	0.0503	<0.001	0.503	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000605	<0.000005	0.000605	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000481	<0.000005	0.000481	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000202	<0.000005	0.000202	<0.00005	-	-	-
Pyrene by GCMS	0.0000463	<0.000005	0.000463	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000249	<0.000005	0.000249	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000095	<0.000005	0.000095	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000112	<0.000002	0.000112	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000173	<0.000005	0.000173	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000268	<0.000082	0.00268	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.61
Conductivity (µS/cm)	109.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701830
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-L20
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.61
Conductivity (µS/cm)	109.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701838
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-L20
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0153	<0.0005	0.153	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00106	<0.001	0.0106	<0.01	-	-	-
Copper	0.000752	<0.0003	0.00752	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000551	<0.0004	0.00551	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0303	<0.001	0.303	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.437	<0.019	4.37	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000192	<0.000005	0.000192	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.10
Conductivity (µS/cm)	81.90
Temperature (°C)	20.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701838
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-L20
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.10
Conductivity (µS/cm)	81.90
Temperature (°C)	20.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.6
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701844
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-L20
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00191	<0.0005	0.0191	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00111	<0.0003	0.0111	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0551	<0.003	0.551	<0.03	-	-	-
Nickel	0.000689	<0.0004	0.00689	<0.004	-	-	-
Selenium	0.00282	<0.001	0.0282	<0.01	-	-	-
Vanadium	0.0033	<0.001	0.033	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.979	<0.019	9.79	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000162	<0.00001	0.000162	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000787	<0.000005	0.0000787	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000629	<0.000005	0.0000629	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.10
Conductivity (µS/cm)	161.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.6
Particle Size <4mm	>95%		

Case	
SDG	180608-17
Lab Sample Number(s)	17701844
Sampled Date	05-Jun-2018
Customer Sample Ref.	40A-L20
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.10
Conductivity (µS/cm)	161.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	17701568	17701633	17701703	17701802	17701826	17701830	17701838	17701844	17701850	17701606
Customer Sample Ref.	40A-G25	40A-G25	40A-G25	40A-G25	40A-G25-V	40A-L20	40A-L20	40A-L20	40A-L20-V	40A-N24
AGS Ref.										
Depth	0.50 - 0.50	1.20 - 1.20	2.00 - 2.00	3.00 - 3.00	3.10 - 3.10	0.50 - 0.50	1.00 - 1.00	2.50 - 2.50	3.50 - 3.50	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	15-Jun-2018		15-Jun-2018			15-Jun-2018		15-Jun-2018		
Ammoniacal Nitrogen	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018		19-Jun-2018	15-Jun-2018	19-Jun-2018		19-Jun-2018
Ammonium Soil by Titration	14-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018
Anions by Kone (soil)	18-Jun-2018		18-Jun-2018			18-Jun-2018		18-Jun-2018		
Asbestos ID in Solid Samples	18-Jun-2018		18-Jun-2018			18-Jun-2018		18-Jun-2018		
CEN 10:1 Leachate (1 Stage)	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018		09-Jun-2018	09-Jun-2018	09-Jun-2018		09-Jun-2018
CEN Readings	14-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018		12-Jun-2018	12-Jun-2018	12-Jun-2018		14-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018
Dissolved Metals by ICP-MS	19-Jun-2018	20-Jun-2018	19-Jun-2018	18-Jun-2018		19-Jun-2018	18-Jun-2018	19-Jun-2018		18-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	15-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018		16-Jun-2018	14-Jun-2018	16-Jun-2018		14-Jun-2018
EPH CWG (Aliphatic) GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	13-Jun-2018	15-Jun-2018	15-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	18-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	15-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018		16-Jun-2018	14-Jun-2018	16-Jun-2018		14-Jun-2018
EPH CWG (Aromatic) GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	13-Jun-2018	15-Jun-2018	15-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	18-Jun-2018
GRO by GC-FID (S)	18-Jun-2018	16-Jun-2018	18-Jun-2018	16-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	18-Jun-2018
GRO by GC-FID (W)	18-Jun-2018	18-Jun-2018	18-Jun-2018	19-Jun-2018		16-Jun-2018	18-Jun-2018	16-Jun-2018		19-Jun-2018
Mercury Dissolved	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018		14-Jun-2018	13-Jun-2018	14-Jun-2018		13-Jun-2018
Metals in solid samples by OES	15-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018
PAH by GCMS	18-Jun-2018	19-Jun-2018	18-Jun-2018	12-Jun-2018	14-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
PAH Spec MS - Aqueous (W)	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018		15-Jun-2018	15-Jun-2018	15-Jun-2018		15-Jun-2018
pH	18-Jun-2018	15-Jun-2018	18-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	15-Jun-2018	17-Jun-2018	18-Jun-2018	18-Jun-2018
pH Value	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018		14-Jun-2018	13-Jun-2018	14-Jun-2018		13-Jun-2018
Phenols by HPLC (S)	13-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018
Sample description	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Total Organic Carbon	18-Jun-2018	18-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	11-Jun-2018	18-Jun-2018
Total Sulphate	12-Jun-2018		12-Jun-2018			12-Jun-2018		12-Jun-2018		
Total Sulphur	13-Jun-2018		13-Jun-2018			13-Jun-2018		13-Jun-2018		
TPH CWG (W)	18-Jun-2018	18-Jun-2018	18-Jun-2018	19-Jun-2018		16-Jun-2018	18-Jun-2018	16-Jun-2018		19-Jun-2018
TPH CWG GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	18-Jun-2018
VOC MS (S)	15-Jun-2018	14-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	14-Jun-2018	15-Jun-2018

Lab Sample No(s)	17701612	17701617	17701621	17701575	17701582	17701588	17701595	17701601	17701627	17701637
Customer Sample Ref.	40A-N24	40A-N24	40A-N24	40A-N26	40A-N26	40A-N26	40A-N26	40A-N26-V	40A-O23	40A-O23
AGS Ref.										
Depth	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	2.60 - 2.60	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	15-Jun-2018		15-Jun-2018		15-Jun-2018		15-Jun-2018			15-Jun-2018
Ammoniacal Nitrogen	14-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	15-Jun-2018		19-Jun-2018	19-Jun-2018
Ammonium Soil by Titration	14-Jun-2018	14-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018
Anions by Kone (soil)	18-Jun-2018		18-Jun-2018		18-Jun-2018		18-Jun-2018			18-Jun-2018
Asbestos ID in Solid Samples	18-Jun-2018		18-Jun-2018		18-Jun-2018		18-Jun-2018			18-Jun-2018
CEN 10:1 Leachate (1 Stage)	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018		09-Jun-2018	09-Jun-2018
CEN Readings	14-Jun-2018	14-Jun-2018	12-Jun-2018	13-Jun-2018	12-Jun-2018	14-Jun-2018	12-Jun-2018		14-Jun-2018	14-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018
Dissolved Metals by ICP-MS	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018		18-Jun-2018	18-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	15-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	14-Jun-2018		14-Jun-2018	14-Jun-2018
EPH CWG (Aliphatic) GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018	13-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	15-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	14-Jun-2018		14-Jun-2018	14-Jun-2018
EPH CWG (Aromatic) GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018	13-Jun-2018
GRO by GC-FID (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
GRO by GC-FID (W)	13-Jun-2018	13-Jun-2018	19-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018	19-Jun-2018		19-Jun-2018	18-Jun-2018
Mercury Dissolved	12-Jun-2018	12-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	12-Jun-2018	13-Jun-2018		13-Jun-2018	13-Jun-2018
Metals in solid samples by OES	14-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	13-Jun-2018	15-Jun-2018
PAH by GCMS	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018	18-Jun-2018	12-Jun-2018
PAH Spec MS - Aqueous (W)	13-Jun-2018	13-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	13-Jun-2018	15-Jun-2018		15-Jun-2018	15-Jun-2018
pH	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	12-Jun-2018	18-Jun-2018	18-Jun-2018
pH Value	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018		13-Jun-2018	13-Jun-2018
Phenols by HPLC (S)	14-Jun-2018	13-Jun-2018	14-Jun-2018	15-Jun-2018	13-Jun-2018	14-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018
Sample description	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Total Organic Carbon	18-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	11-Jun-2018	15-Jun-2018
Total Sulphate	12-Jun-2018		12-Jun-2018		12-Jun-2018		12-Jun-2018			12-Jun-2018
Total Sulphur	13-Jun-2018		13-Jun-2018		13-Jun-2018		13-Jun-2018			13-Jun-2018
TPH CWG (W)	15-Jun-2018	15-Jun-2018	19-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018	19-Jun-2018		19-Jun-2018	18-Jun-2018
TPH CWG GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
VOC MS (S)	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018

Validated

CERTIFICATE OF ANALYSIS

SDG: 180608-17 **Client Reference:** **Report Number:** 461660
Location: Llanwern **Order Number:** LLA443 **Superseded Report:**

Lab Sample No(s)	17701642	17701646	17701651	17701657	17701662	17701667	17701676	17701691	17701698	17701719
Customer Sample Ref.	40A-O23	40A-O25	40A-O25	40A-O25	40A-O25	40A-O25-V	40A-Q24	40A-Q24	40A-Q24	40A-Q27
AGS Ref.										
Depth	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.80 - 2.80	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		15-Jun-2018		15-Jun-2018			15-Jun-2018		15-Jun-2018	
Ammoniacal Nitrogen	15-Jun-2018	19-Jun-2018	19-Jun-2018	15-Jun-2018	19-Jun-2018		19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018
Ammonium Soil by Titration	14-Jun-2018	15-Jun-2018	15-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018
Anions by Kone (soil)		19-Jun-2018		18-Jun-2018			18-Jun-2018		18-Jun-2018	
Asbestos ID in Solid Samples		15-Jun-2018		15-Jun-2018			15-Jun-2018		15-Jun-2018	
CEN 10:1 Leachate (1 Stage)	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018		09-Jun-2018	09-Jun-2018	09-Jun-2018	09-Jun-2018
CEN Readings	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018	12-Jun-2018		12-Jun-2018	12-Jun-2018	12-Jun-2018	11-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018
Dissolved Metals by ICP-MS	18-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018		18-Jun-2018	19-Jun-2018	19-Jun-2018	18-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	14-Jun-2018	16-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018		16-Jun-2018	16-Jun-2018	16-Jun-2018	16-Jun-2018
EPH CWG (Aliphatic) GC (S)	13-Jun-2018	14-Jun-2018	14-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018	18-Jun-2018	18-Jun-2018	13-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	14-Jun-2018	16-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018		16-Jun-2018	16-Jun-2018	16-Jun-2018	16-Jun-2018
EPH CWG (Aromatic) GC (S)	13-Jun-2018	14-Jun-2018	14-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018	18-Jun-2018	18-Jun-2018	13-Jun-2018
GRO by GC-FID (S)	18-Jun-2018	18-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018
GRO by GC-FID (W)	18-Jun-2018	16-Jun-2018	16-Jun-2018	18-Jun-2018	16-Jun-2018		16-Jun-2018	16-Jun-2018	16-Jun-2018	15-Jun-2018
Mercury Dissolved	13-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	14-Jun-2018		14-Jun-2018	14-Jun-2018	14-Jun-2018	12-Jun-2018
Metals in solid samples by OES	13-Jun-2018	14-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018
PAH by GCMS	12-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018	14-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	12-Jun-2018
PAH Spec MS - Aqueous (W)	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018		15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018
pH	17-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
pH Value	13-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	14-Jun-2018		14-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018
Phenols by HPLC (S)	13-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	14-Jun-2018	13-Jun-2018
Sample description	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Total Organic Carbon	18-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
Total Sulphate		12-Jun-2018		12-Jun-2018			12-Jun-2018		12-Jun-2018	
Total Sulphur		13-Jun-2018		13-Jun-2018			13-Jun-2018		13-Jun-2018	
TPH CWG (W)	18-Jun-2018	16-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018		16-Jun-2018	16-Jun-2018	16-Jun-2018	16-Jun-2018
TPH CWG GC (S)	18-Jun-2018	18-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
VOC MS (S)	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018

Lab Sample No(s)	17701727	17701735	17701744	17701711	17701753	17701761	17701771	17701781	17701792	17701812
Customer Sample Ref.	40A-Q27	40A-Q27	40A-Q27	40A-Q24-V	40A-Q27-V	40A-R25	40A-R25	40A-R25-V	40A-S27	40A-S27
AGS Ref.										
Depth	0.70 - 0.70	1.20 - 1.20	1.90 - 1.90	2.10 - 2.10	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.20 - 0.20	0.70 - 0.70
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	15-Jun-2018		15-Jun-2018				15-Jun-2018			15-Jun-2018
Ammoniacal Nitrogen	19-Jun-2018	19-Jun-2018	19-Jun-2018			18-Jun-2018	19-Jun-2018		19-Jun-2018	19-Jun-2018
Ammonium Soil by Titration	15-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018
Anions by Kone (soil)	18-Jun-2018		22-Jun-2018				18-Jun-2018			18-Jun-2018
Asbestos ID in Solid Samples	18-Jun-2018		18-Jun-2018				18-Jun-2018			18-Jun-2018
CEN 10:1 Leachate (1 Stage)	09-Jun-2018	09-Jun-2018	09-Jun-2018			09-Jun-2018	09-Jun-2018		09-Jun-2018	09-Jun-2018
CEN Readings	11-Jun-2018	14-Jun-2018	14-Jun-2018			13-Jun-2018	13-Jun-2018		13-Jun-2018	14-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018
Dissolved Metals by ICP-MS	18-Jun-2018	18-Jun-2018	18-Jun-2018			18-Jun-2018	20-Jun-2018		19-Jun-2018	20-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	16-Jun-2018	15-Jun-2018	15-Jun-2018			16-Jun-2018	18-Jun-2018		18-Jun-2018	18-Jun-2018
EPH CWG (Aliphatic) GC (S)	13-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	16-Jun-2018	15-Jun-2018	15-Jun-2018			16-Jun-2018	18-Jun-2018		18-Jun-2018	18-Jun-2018
EPH CWG (Aromatic) GC (S)	13-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018	15-Jun-2018	13-Jun-2018
GRO by GC-FID (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
GRO by GC-FID (W)	13-Jun-2018	14-Jun-2018	18-Jun-2018			13-Jun-2018	18-Jun-2018		18-Jun-2018	18-Jun-2018
Mercury Dissolved	12-Jun-2018	12-Jun-2018	12-Jun-2018			12-Jun-2018	13-Jun-2018		13-Jun-2018	13-Jun-2018
Metals in solid samples by OES	14-Jun-2018	14-Jun-2018	15-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	18-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018
PAH by GCMS	12-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	14-Jun-2018	15-Jun-2018
PAH Spec MS - Aqueous (W)	15-Jun-2018	13-Jun-2018	13-Jun-2018			15-Jun-2018	15-Jun-2018		15-Jun-2018	15-Jun-2018
pH	17-Jun-2018	15-Jun-2018	17-Jun-2018	18-Jun-2018	15-Jun-2018	17-Jun-2018	18-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018
pH Value	15-Jun-2018	13-Jun-2018	13-Jun-2018			15-Jun-2018	14-Jun-2018		14-Jun-2018	13-Jun-2018
Phenols by HPLC (S)	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	13-Jun-2018
Sample description	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Total Organic Carbon	18-Jun-2018	14-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
Total Sulphate	12-Jun-2018		12-Jun-2018				12-Jun-2018			12-Jun-2018
Total Sulphur	13-Jun-2018		13-Jun-2018				13-Jun-2018			13-Jun-2018
TPH CWG (W)	16-Jun-2018	15-Jun-2018	18-Jun-2018			16-Jun-2018	18-Jun-2018		18-Jun-2018	18-Jun-2018
TPH CWG GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
VOC MS (S)	15-Jun-2018	15-Jun-2018	18-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-17	**Client Reference:**		**Report Number:**	461660
Location:	Llanwern	**Order Number:**	LLA443	**Superseded Report:**	

Lab Sample No(s)	17701818
Customer Sample Ref.	40A-S27-V
AGS Ref.	
Depth	0.80 - 0.80
Type	Soil/Solid (S)

Ammonium Soil by Titration	15-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	19-Jun-2018
EPH CWG (Aliphatic) GC (S)	18-Jun-2018
EPH CWG (Aromatic) GC (S)	18-Jun-2018
GRO by GC-FID (S)	18-Jun-2018
Metals in solid samples by OES	13-Jun-2018
PAH by GCMS	19-Jun-2018
pH	18-Jun-2018
Phenols by HPLC (S)	13-Jun-2018
Sample description	08-Jun-2018
Total Organic Carbon	18-Jun-2018
TPH CWG GC (S)	18-Jun-2018
VOC MS (S)	15-Jun-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Hawarden
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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	20 June 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180608-18
Your Reference:	
Location:	Llanwern
Report No:	460966

We received 13 samples on Friday June 08, 2018 and 13 of these samples were scheduled for analysis which was completed on Wednesday June 20, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17701793	40A-H21		1.00 - 1.00	07/06/2018
17701803	40A-H21-V		1.40 - 1.40	07/06/2018
17701762	40A-I25		0.50 - 0.50	07/06/2018
17701774	40A-I25		0.90 - 0.90	07/06/2018
17701783	40A-I25-V		1.00 - 1.00	07/06/2018
17701694	40A-J23		0.70 - 0.70	07/06/2018
17701746	40A-J23		1.60 - 1.60	07/06/2018
17701737	40A-J23		2.00 - 2.00	07/06/2018
17701755	40A-J23-V		2.20 - 2.20	07/06/2018
17701704	40A-Q21		1.50 - 1.50	07/06/2018
17701713	40A-Q21-V		3.00 - 3.00	07/06/2018
17701721	40A-R21		0.50 - 0.50	07/06/2018
17701728	40A-R21-V		0.70 - 0.70	07/06/2018

Maximum Sample/Coolbox Temperature (°C) :

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

13.4

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17701793			17701803			17701762			17701774			17701783			17701694			17701746
Customer Sample Reference			40A-H21			40A-H21-V			40A-I25			40A-I25			40A-I25-V			40A-J23			40A-J23
AGS Reference																					
Depth (m)			1.00 - 1.00			1.40 - 1.40			0.50 - 0.50			0.90 - 0.90			1.00 - 1.00			0.70 - 0.70			1.60 - 1.60
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 5										X					X			X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 8	X					X			X					X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 13		X		X			X			X		X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 5										X					X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 5									X					X			X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2														X					
CEN Readings	All	NDPs: 0 Tests: 8	X					X			X					X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 21	X	X		X		X	X		X	X		X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8	X					X			X					X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8	X					X			X					X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 13		X		X			X			X		X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8	X					X			X					X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 13		X		X			X			X		X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 13			X		X			X			X		X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8	X					X			X					X			X		

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17701793			17701803			17701762			17701774			17701783		17701694			17701746	
Customer Sample Reference			40A-H21			40A-H21-V			40A-I25			40A-I25			40A-I25-V		40A-J23			40A-J23	
AGS Reference																				
Depth (m)			1.00 - 1.00			1.40 - 1.40			0.50 - 0.50			0.90 - 0.90			1.00 - 1.00		0.70 - 0.70			1.60 - 1.60	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 8	X					X			X					X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 13		X		X			X			X		X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 13		X		X			X			X		X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 8	X					X			X					X			X		
pH	All	NDPs: 0 Tests: 13		X		X			X			X		X			X			X	
pH Value	All	NDPs: 0 Tests: 8	X					X			X					X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 13		X		X			X			X		X			X			X	
Sample description	All	NDPs: 0 Tests: 12		X		X			X			X		X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 13		X		X			X			X		X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 5										X					X			X	
Total Sulphur	All	NDPs: 0 Tests: 5										X					X			X	
TPH CWG (W)	All	NDPs: 0 Tests: 8	X					X			X					X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 13		X		X			X			X		X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 13			X		X			X			X		X			X			X

17701728	40A-R21-V		0.70 - 0.70	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X		
17701721	40A-R21		0.50 - 0.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X		X	X	X			X		
				1kg TUB	S	X			X		X							X				
17701713	40A-Q21-V		3.00 - 3.00	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X		
17701704	40A-Q21		1.50 - 1.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X		
				1kg TUB	S	X			X		X							X				
17701755	40A-J23-V		2.20 - 2.20	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X		
17701737	40A-J23		2.00 - 2.00	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X		
				1kg TUB	S	X			X		X							X				

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	**fine**	0.063mm - 0.1mm	**medium**	0.1mm - 2mm	**coarse**	2mm - 10mm	**very coarse**	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17701793	40A-H21	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
17701803	40A-H21-V	1.40 - 1.40	Dark Brown	Clay	Vegetation	None
17701762	40A-I25	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17701774	40A-I25	0.90 - 0.90	Dark Brown	Sandy Loam	Stones	Crushed Brick
17701783	40A-I25-V	1.00 - 1.00	Grey	Silty Clay	None	None
17701694	40A-J23	0.70 - 0.70	Dark Brown	Loamy Sand	Stones	Brick
17701737	40A-J23	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Brick
17701746	40A-J23	1.60 - 1.60	Grey	N/A	Stones	Oil/Petroleum
17701755	40A-J23-V	2.20 - 2.20	Dark Brown	Silty Clay Loam	None	Vegetation
17701704	40A-Q21	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	None
17701713	40A-Q21-V	3.00 - 3.00	Dark Brown	Silty Clay Loam	Vegetation	None
17701721	40A-R21	0.50 - 0.50	Dark Brown	Sand	Stones	N/A
17701728	40A-R21-V	0.70 - 0.70	Dark Brown	Silty Clay	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H21	40A-H21-V	40A-I25	40A-I25	40A-I25-V	40A-J23
			Depth (m)	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	0.90 - 0.90	1.00 - 1.00	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-18	180608-18	180608-18	180608-18	180608-18	180608-18
			Lab Sample No.(s)	17701793	17701803	17701762	17701774	17701783	17701694
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		25	29	8.8	12	29	9
Exchangeable Ammonia as N	<12 mg/kg	TM024		16.7 M	19.7 M	<12 M	<12 M	267 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132					0.14		0.148
Sulphate, Total potential	<0.06 %	TM132					0.42		0.444
Soil Organic Matter (SOM)	<0.35 %	TM132		9.36 #	3.41 #	2.84 #	6.98 #	2.31 #	1.7 #
pH	1 pH Units	TM133		7.75 M	7.54 M	10.9 M	8.32 M	7.27 M	8.49 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.2 M	7.96 M	14.7 M	7.48 M	9.26 M	11.7 M
Cadmium	<0.02 mg/kg	TM181		0.547 M	0.254 M	1.31 M	0.444 M	0.286 M	0.28 M
Chromium	<0.9 mg/kg	TM181		84.3 M	38.5 M	26.8 M	11 M	34.6 M	10.8 M
Copper	<1.4 mg/kg	TM181		25.1 M	21.2 M	38.4 M	21.2 M	23.7 M	33 M
Iron	<1000 mg/kg	TM181		61200 #	30100 #	33200 #	25900 #	25500 #	23600 #
Lead	<0.7 mg/kg	TM181		50.6 M	23.8 M	378 M	33.5 M	25.6 M	37.3 M
Manganese	<0.13 mg/kg	TM181		7260 M	440 M	1580 M	1120 M	425 M	1230 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		24.8 M	41.4 M	73.3 M	23.9 M	36.8 M	24.5 M
Selenium	<1 mg/kg	TM181		3.5 #	1.29 #	1.32 #	1.26 #	1.15 #	1.3 #
Vanadium	<0.2 mg/kg	TM181		203 #	57.7 #	480 #	34.1 #	54.7 #	40.2 #
Zinc	<1.9 mg/kg	TM181		190 M	91.4 M	551 M	86 M	116 M	128 M
Sulphate, acid soluble (total)	<0.02 %	TM221					0.0807		0.183
Calcium	<21 mg/kg	TM224					42800		63100
Magnesium	<8 mg/kg	TM224					12500		5110
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243					0.0956 M		0.0491 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							0.0013 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							N/C
Asbestos Quantification - Total - %	<0.001 %	TM304							0.0013 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-J23	40A-J23	40A-J23-V	40A-Q21	40A-Q21-V	40A-R21
			Depth (m)	1.60 - 1.60	2.00 - 2.00	2.20 - 2.20	1.50 - 1.50	3.00 - 3.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-18	180608-18	180608-18	180608-18	180608-18	180608-18
			Lab Sample No.(s)	17701746	17701737	17701755	17701704	17701713	17701721
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.3	9.3	39	14	82	9.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12	<12 M	<12 M	<12 M	296 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01	<0.01 M	<0.01 M	0.522 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01	<0.01 M	0.0165 M	0.0232 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015	<0.015 M	<0.015 M	0.186 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035	<0.035 M	<0.035 M	0.731 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.247			0.234		0.201
Sulphate, Total potential	<0.06 %	TM132		0.741			0.702		0.603
Soil Organic Matter (SOM)	<0.35 %	TM132		4.14	2.07 #	6.76 #	2.74 #	81.2 #	0.893 #
pH	1 pH Units	TM133		8.55	9.83 M	8.09 M	11.7 M	7.22 M	11.6 M
Cyanide, Total	<1 mg/kg	TM153		<1	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.12	9.28 M	15.6 M	10.7 M	3.64 M	7.37 M
Cadmium	<0.02 mg/kg	TM181		0.205	0.418 M	0.638 M	0.326 M	0.0904 M	0.471 M
Chromium	<0.9 mg/kg	TM181		6.02	22.7 M	32.5 M	51 M	5.01 M	36.9 M
Copper	<1.4 mg/kg	TM181		6.8	24.3 M	27.7 M	18 M	8.31 M	18 M
Iron	<1000 mg/kg	TM181		6300	29300 #	22200 #	18100 #	7950 #	33500 #
Lead	<0.7 mg/kg	TM181		8.03	25.8 M	44.4 M	19.9 M	2.2 M	45.9 M
Manganese	<0.13 mg/kg	TM181		418	1460 M	367 M	4000 M	308 M	3540 M
Mercury	<0.14 mg/kg	TM181		<0.14	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		7.16	24.9 M	28.2 M	12.9 M	9.48 M	12.4 M
Selenium	<1 mg/kg	TM181		<1	1.38 #	1.29 #	2.31 #	1.88 #	1.83 #
Vanadium	<0.2 mg/kg	TM181		13.7	40.9 #	51.2 #	44.5 #	10.4 #	42.3 #
Zinc	<1.9 mg/kg	TM181		27.7	104 M	154 M	46.6 M	9.1 M	144 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.0632			0.389		0.492
Calcium	<21 mg/kg	TM224		248000			151000		169000
Magnesium	<8 mg/kg	TM224		7370			20600		41300
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0215			0.0904 M		0.161 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304					<0.001 #		
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304					<0.001 #		
Additional Asbestos Components (Using TM048)		TM304					None #		
Analysts Comments		TM304					N/C		
Asbestos Quantification - Total - %	<0.001 %	TM304					<0.001 #		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	**LOD/Units**	**Method**	
Customer Sample Ref.			40A-R21-V
Depth (m)			0.70 - 0.70
Sample Type			Soil/Solid (S)
Date Sampled			07/06/2018
Sample Time			00:00
Date Received			08/06/2018
SDG Ref			180608-18
Lab Sample No.(s)			17701728
AGS Reference			
Moisture Content Ratio (% of as received sample)	%	PM024	26
Exchangeable Ammonia as N	<12 mg/kg	TM024	111 M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M
Soil Organic Matter (SOM)	<0.35 %	TM132	1.11 #
pH	1 pH Units	TM133	7.92 M
Cyanide, Total	<1 mg/kg	TM153	<1 M
Arsenic	<0.6 mg/kg	TM181	12.6 M
Cadmium	<0.02 mg/kg	TM181	0.21 M
Chromium	<0.9 mg/kg	TM181	30.3 M
Copper	<1.4 mg/kg	TM181	11.6 M
Iron	<1000 mg/kg	TM181	28100 #
Lead	<0.7 mg/kg	TM181	28.4 M
Manganese	<0.13 mg/kg	TM181	837 M
Mercury	<0.14 mg/kg	TM181	<0.14 M
Nickel	<0.2 mg/kg	TM181	38.1 M
Selenium	<1 mg/kg	TM181	<1 #
Vanadium	<0.2 mg/kg	TM181	53.2 #
Zinc	<1.9 mg/kg	TM181	111 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H21	40A-H21-V	40A-I25	40A-I25	40A-I25-V	40A-J23
			Depth (m)	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	0.90 - 0.90	1.00 - 1.00	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-18	180608-18	180608-18	180608-18	180608-18	180608-18
			Lab Sample No.(s)	17701793	17701803	17701762	17701774	17701783	17701694
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		103	92.5	98.1	85.6	80.2	88.5
Acenaphthene-d10 % recovery**	%	TM218		93.2	91.2	94	83	84.5	85.6
Phenanthrene-d10 % recovery**	%	TM218		96	88.1	97.9	79.8	89.3	85.6
Chrysene-d12 % recovery**	%	TM218		98.6	79.8	99.5	84.5	72.2	76.5
Perylene-d12 % recovery**	%	TM218		97.8	81.8	102	85.4	70.5	76.7
Naphthalene	<0.009 mg/kg	TM218		0.268 M	<0.009 M	<0.045 M	0.0121 M	<0.009 M	<0.045 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0674 M	<0.012 M	<0.06 M	<0.012 M	<0.012 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		0.0188 M	<0.008 M	<0.04 M	<0.008 M	<0.008 M	<0.04 M
Fluorene	<0.01 mg/kg	TM218		0.075 M	<0.01 M	<0.05 M	0.0141 M	<0.01 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		0.451 M	<0.015 M	0.198 M	0.0696 M	<0.015 M	<0.075 M
Anthracene	<0.016 mg/kg	TM218		0.119 M	<0.016 M	<0.08 M	<0.016 M	<0.016 M	<0.08 M
Fluoranthene	<0.017 mg/kg	TM218		0.757 M	<0.017 M	0.595 M	0.0642 M	<0.017 M	<0.085 M
Pyrene	<0.015 mg/kg	TM218		0.592 M	<0.015 M	0.495 M	0.0466 M	<0.015 M	0.184 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.428 M	<0.014 M	0.436 M	0.0413 M	<0.014 M	0.0942 M
Chrysene	<0.01 mg/kg	TM218		0.442 M	<0.01 M	0.572 M	0.0539 M	<0.01 M	0.146 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.663 M	<0.015 M	0.671 M	0.0587 M	<0.015 M	0.102 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.206 M	<0.014 M	0.255 M	0.024 M	<0.014 M	<0.07 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.367 M	<0.015 M	0.48 M	0.0339 M	<0.015 M	0.117 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.301 M	<0.018 M	0.487 M	0.0259 M	<0.018 M	<0.09 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0674 M	<0.023 M	<0.115 M	<0.023 M	<0.023 M	<0.115 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.27 M	<0.024 M	0.458 M	0.0275 M	<0.024 M	0.229 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		5.09	<0.118	4.65	0.472	<0.118	0.872

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-J23	40A-J23	40A-J23-V	40A-Q21	40A-Q21-V	40A-R21
			Depth (m)	1.60 - 1.60	2.00 - 2.00	2.20 - 2.20	1.50 - 1.50	3.00 - 3.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-18	180608-18	180608-18	180608-18	180608-18	180608-18
			Lab Sample No.(s)	17701746	17701737	17701755	17701704	17701713	17701721
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.3	92.9	83.1	92	96.8	99.1
Acenaphthene-d10 % recovery**	%	TM218		91.9	90.1	83.8	91.7	97.1	95.5
Phenanthrene-d10 % recovery**	%	TM218		95.8	90.3	90.4	93	99.5	97.8
Chrysene-d12 % recovery**	%	TM218		76.3	85.6	89.1	89.5	109	101
Perylene-d12 % recovery**	%	TM218		71.3	83.3	96	93.7	107	96.5
Naphthalene	<0.009 mg/kg	TM218		0.408	0.0695 M	<0.009 M	0.0155 M	<0.018 M	0.022 M
Acenaphthylene	<0.012 mg/kg	TM218		0.372	<0.06 M	<0.012 M	<0.012 M	<0.024 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		2.42	0.128 M	<0.008 M	0.0111 M	<0.016 M	0.0276 M
Fluorene	<0.01 mg/kg	TM218		2.81	0.202 M	<0.01 M	0.0116 M	<0.02 M	0.0129 M
Phenanthrene	<0.015 mg/kg	TM218		9.54	0.446 M	<0.015 M	0.0627 M	<0.03 M	0.217 M
Anthracene	<0.016 mg/kg	TM218		1.67	0.115 M	<0.016 M	<0.016 M	<0.032 M	0.0326 M
Fluoranthene	<0.017 mg/kg	TM218		1.47	0.184 M	<0.017 M	0.0702 M	<0.034 M	0.264 M
Pyrene	<0.015 mg/kg	TM218		4.65	0.358 M	<0.015 M	0.0639 M	<0.03 M	0.261 M
Benz(a)anthracene	<0.014 mg/kg	TM218		2.05	0.161 M	<0.014 M	0.0261 M	<0.028 M	0.113 M
Chrysene	<0.01 mg/kg	TM218		4.74	0.264 M	<0.01 M	0.0296 M	<0.02 M	0.146 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.937	0.103 M	<0.015 M	0.0276 M	<0.03 M	0.183 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.195	<0.07 M	<0.014 M	<0.014 M	<0.028 M	0.0632 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.2	0.101 M	<0.015 M	0.02 M	1.21 M	0.0915 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.328	<0.09 M	<0.018 M	<0.018 M	<0.036 M	0.0741 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.267	<0.115 M	<0.023 M	<0.023 M	<0.046 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.688	<0.12 M	<0.024 M	<0.024 M	<0.048 M	0.0841 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		33.7	2.13	<0.118	0.338	1.21	1.59

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref. 40A-R21-V				
			Depth (m) 0.70 - 0.70				
			Sample Type Soil/Solid (S)				
			Date Sampled 07/06/2018				
			Sample Time 00:00				
			Date Received 08/06/2018				
			SDG Ref 180608-18				
			Lab Sample No.(s) 17701728				
			AGS Reference				
Naphthalene-d8 % recovery**	%	TM218	83.8				
Acenaphthene-d10 % recovery**	%	TM218	80.5				
Phenanthrene-d10 % recovery**	%	TM218	86.9				
Chrysene-d12 % recovery**	%	TM218	88.7				
Perylene-d12 % recovery**	%	TM218	89.2				
Naphthalene	<0.009 mg/kg	TM218	<0.009 M				
Acenaphthylene	<0.012 mg/kg	TM218	<0.012 M				
Acenaphthene	<0.008 mg/kg	TM218	<0.008 M				
Fluorene	<0.01 mg/kg	TM218	<0.01 M				
Phenanthrene	<0.015 mg/kg	TM218	<0.015 M				
Anthracene	<0.016 mg/kg	TM218	<0.016 M				
Fluoranthene	<0.017 mg/kg	TM218	<0.017 M				
Pyrene	<0.015 mg/kg	TM218	<0.015 M				
Benz(a)anthracene	<0.014 mg/kg	TM218	<0.014 M				
Chrysene	<0.01 mg/kg	TM218	<0.01 M				
Benzo(b)fluoranthene	<0.015 mg/kg	TM218	<0.015 M				
Benzo(k)fluoranthene	<0.014 mg/kg	TM218	<0.014 M				
Benzo(a)pyrene	<0.015 mg/kg	TM218	<0.015 M				
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218	<0.018 M				
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218	<0.023 M				
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218	<0.024 M				
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218	<0.118				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H21	40A-H21-V	40A-I25	40A-I25	40A-I25-V	40A-J23
			Depth (m)	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	0.90 - 0.90	1.00 - 1.00	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-18	180608-18	180608-18	180608-18	180608-18	180608-18
			Lab Sample No.(s)	17701793	17701803	17701762	17701774	17701783	17701694
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		60	101	81	75	99	77
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	2.06	1.34	0.428	21.2
Aliphatics >C16-C21	<0.1 mg/kg	TM173		1.06	<0.1	11.8	2.73	<0.1	69.7
Aliphatics >C21-C35	<0.1 mg/kg	TM173		28.6	<0.1	123	12.5	0.218	253
Aliphatics >C35-C44	<0.1 mg/kg	TM173		3.38	<0.1	40.3	1.82	0.21	107
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		33	<0.1	177	18.4	0.857	451
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2	<0.1	1.3	1.38	<0.1	9.68
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		6.84	<0.1	6.55	4.25	<0.1	63.4
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		63.4	3.71	70.7	13.9	4.6	335
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		17.7	1.01	44.7	4.48	0.711	157
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		6.81	<0.1	18.2	1.4	<0.1	67.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		90	4.72	123	24	5.31	565
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		123	4.72	300	42.3	6.17	1020

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-J23	40A-J23	40A-J23-V	40A-Q21	40A-Q21-V	40A-R21
			Depth (m)	1.60 - 1.60	2.00 - 2.00	2.20 - 2.20	1.50 - 1.50	3.00 - 3.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-18	180608-18	180608-18	180608-18	180608-18	180608-18
			Lab Sample No.(s)	17701746	17701737	17701755	17701704	17701713	17701721
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		23	76	107	108	81	100
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		13.4	4.58	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0982	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.977	0.0836	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		2.78	0.602	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		4.61	2.06	0.0512	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		256	30	<0.1	<0.1	1.05	2.7
Aliphatics >C16-C21	<0.1 mg/kg	TM173		626	44.4	<0.1	4.48	0.952	10.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1800	112	4.89	24.4	70.5	99.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		830	53.2	<0.1	2.81	0.353	26.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		3510	240	4.89	31.7	72.9	139
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		1.85	0.415	<0.04	<0.04	0.151	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		3.08	1.37	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		282	14.7	1.16	1.14	0.493	0.329
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		790	34.4	2.23	3.87	3.54	3.46
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		2240	99	35.6	11.1	445	31.4
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		880	46.7	6.65	1.38	14.1	17.3
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		372	19.3	1.43	<0.1	<0.1	8.01
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		4200	195	45.6	17.5	463	52.5
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		7720	439	50.6	49.2	536	191

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R21-V
			Depth (m)	0.70 - 0.70
			Sample Type	Soil/Solid (S)
			Date Sampled	07/06/2018
			Sample Time	00:00
			Date Received	08/06/2018
			SDG Ref	180608-18
			Lab Sample No.(s)	17701728
			AGS Reference	
GRO Surrogate % recovery**	%	TM089		101
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.31
Aliphatics >C16-C21	<0.1 mg/kg	TM173		1.72
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1.48
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		4.52
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.425
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		0.865
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		5.18
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		6.47
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		11

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H21	40A-H21-V	40A-I25	40A-I25	40A-I25-V	40A-J23
			Depth (m)	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	0.90 - 0.90	1.00 - 1.00	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-18	180608-18	180608-18	180608-18	180608-18	180608-18
			Lab Sample No.(s)	17701793	17701803	17701762	17701774	17701783	17701694
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	105	105	106	107	119
Toluene-d8**	%	TM116		90.9	96	95.5	96.5	95	83.3
4-Bromofluorobenzene**	%	TM116		78.4	98.7	91.5	88.1	94.8	71.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-J23	40A-J23	40A-J23-V	40A-Q21	40A-Q21-V	40A-R21
			Depth (m)	1.60 - 1.60	2.00 - 2.00	2.20 - 2.20	1.50 - 1.50	3.00 - 3.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018	07/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018	08/06/2018
			SDG Ref	180608-18	180608-18	180608-18	180608-18	180608-18	180608-18
			Lab Sample No.(s)	17701746	17701737	17701755	17701704	17701713	17701721
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.2	110	108	105	105	113
Toluene-d8**	%	TM116		96.9	93.1	97.4	97.8	92.5	95.9
4-Bromofluorobenzene**	%	TM116		98.7	81	96	96.4	81.9	95.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<2 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<1.8 #	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<1.4 #	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.8 #	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<2 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<2 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<2.6 #	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<8	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			40A-R21-V	0.70 - 0.70	Soil/Solid (S)	07/06/2018	00:00	08/06/2018	180608-18	17701728	
Dibromofluoromethane**	%	TM116	110								
Toluene-d8**	%	TM116	97								
4-Bromofluorobenzene**	%	TM116	96.8								
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116	<0.1 M								
Benzene	<0.009 mg/kg	TM116	<0.09 M								
Toluene	<0.007 mg/kg	TM116	<0.07 M								
Ethylbenzene	<0.004 mg/kg	TM116	<0.04 M								
p/m-Xylene	<0.01 mg/kg	TM116	<0.1 #								
o-Xylene	<0.01 mg/kg	TM116	<0.1 M								
Naphthalene	<0.013 mg/kg	TM116	<0.13 M								
Sum of BTEX	<0.04 mg/kg	TM116	<0.4								

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-I25 0.90 - 0.90 SOLID 07/06/2018 00:00:00 08/06/2018 12:14:09 180608-18 17701774 TM048	15/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-J23 0.70 - 0.70 SOLID 07/06/2018 00:00:00 08/06/2018 11:41:49 180608-18 17701694 TM048	15/06/2018	Renata Bozhkov	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-J23 1.60 - 1.60 SOLID 07/06/2018 00:00:00 08/06/2018 10:31:12 180608-18 17701746 TM048	18/06/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-Q21 1.50 - 1.50 SOLID 07/06/2018 00:00:00 08/06/2018 10:27:37 180608-18 17701704 TM048	15/06/2018	Renata Bozhkov	Loose fibres in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-R21 0.50 - 0.50 SOLID 07/06/2018 00:00:00 08/06/2018 10:22:27 180608-18 17701721 TM048	15/06/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-J23 0.70 - 0.70 SOLID 07/06/2018 00:00:00 08/06/2018 11:42:51 180608-18 17701694 TM304	None (#)	N/C	0.0013 (#)	<0.001 (#)	0.0013 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-Q21 1.50 - 1.50 SOLID 07/06/2018 00:00:00 08/06/2018 10:28:39 180608-18 17701704 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701694
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-J23
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00642	<0.0005	0.0642	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00125	<0.0003	0.0125	<0.003	-	-	-
Lead	0.00029	<0.0002	0.0029	<0.002	-	-	-
Manganese	0.00346	<0.003	0.0346	<0.03	-	-	-
Nickel	0.000532	<0.0004	0.00532	<0.004	-	-	-
Selenium	0.00131	<0.001	0.0131	<0.01	-	-	-
Vanadium	0.05	<0.001	0.5	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.231	<0.019	2.31	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000941	<0.000005	0.000941	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Anthracene by GCMS	0.00000665	<0.000005	0.0000665	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000197	<0.000005	0.000197	<0.00005	-	-	-
Fluorene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000403	<0.000005	0.000403	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000889	<0.000005	0.0000889	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000198	<0.000082	0.00198	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.31
Conductivity (µS/cm)	109.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

20/06/2018 12:52:22

12:51:55 20/06/2018

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701694
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-J23
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.31
Conductivity (µS/cm)	109.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701704
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-Q21
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.4	<0.2	4	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00212	<0.001	0.0212	<0.01	-	-	-
Copper	0.00688	<0.0003	0.0688	<0.003	-	-	-
Lead	0.000395	<0.0002	0.00395	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00268	<0.0004	0.0268	<0.004	-	-	-
Selenium	0.00615	<0.001	0.0615	<0.01	-	-	-
Vanadium	0.0258	<0.001	0.258	<0.01	-	-	-
Zinc	0.00169	<0.001	0.0169	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000931	<0.00001	0.000931	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000922	<0.000005	0.000922	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000386	<0.000005	0.000386	<0.00005	-	-	-
Anthracene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000968	<0.000005	0.000968	<0.00005	-	-	-
Fluorene by GCMS	0.0000301	<0.000005	0.000301	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000334	<0.000005	0.000334	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000396	<0.000082	0.00396	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.55
Conductivity (µS/cm)	795.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701704
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-Q21
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.011	<0.01	0.11	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.034	<0.01	0.34	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.55
Conductivity (µS/cm)	795.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701721
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-R21
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000608	<0.0005	0.00608	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0165	<0.001	0.165	<0.01	-	-	-
Copper	0.0249	<0.0003	0.249	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00128	<0.0004	0.0128	<0.004	-	-	-
Selenium	0.00176	<0.001	0.0176	<0.01	-	-	-
Vanadium	0.0188	<0.001	0.188	<0.01	-	-	-
Zinc	0.00529	<0.001	0.0529	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000174	<0.00001	0.00174	<0.0001	-	-	-
Acenaphthene by GCMS	0.00362	<0.000005	0.0362	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000266	<0.000005	0.000266	<0.00005	-	-	-
Fluoranthene by GCMS	0.000602	<0.000005	0.00602	<0.00005	-	-	-
Anthracene by GCMS	0.000479	<0.000005	0.00479	<0.00005	-	-	-
Phenanthrene by GCMS	0.00547	<0.000005	0.0547	<0.00005	-	-	-
Fluorene by GCMS	0.00134	<0.000005	0.0134	<0.00005	-	-	-
Chrysene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Pyrene by GCMS	0.000352	<0.000005	0.00352	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0121	<0.000082	0.121	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.53
Conductivity (µS/cm)	718.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701721
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-R21
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	11.53
Conductivity (µS/cm)	718.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701737
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-J23
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.531	<0.2	5.31	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00843	<0.0005	0.0843	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000877	<0.0003	0.00877	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000509	<0.0004	0.00509	<0.004	-	-	-
Selenium	0.00493	<0.001	0.0493	<0.01	-	-	-
Vanadium	0.0777	<0.001	0.777	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000928	<0.00001	0.000928	<0.0001	-	-	-
Acenaphthene by GCMS	0.00047	<0.000005	0.0047	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000385	<0.000005	0.000385	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000343	<0.000005	0.000343	<0.00005	-	-	-
Anthracene by GCMS	0.0000512	<0.000005	0.000512	<0.00005	-	-	-
Phenanthrene by GCMS	0.000199	<0.000005	0.00199	<0.00005	-	-	-
Fluorene by GCMS	0.000305	<0.000005	0.00305	<0.00005	-	-	-
Chrysene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Pyrene by GCMS	0.0000825	<0.000005	0.000825	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000742	<0.000005	0.0000742	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000281	<0.000005	0.000281	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00133	<0.000082	0.0133	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.169	<0.05	1.69	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.01	<0.01	0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	6.37
Conductivity (µS/cm)	142.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701737
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-J23
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.017	<0.01	0.17	<0.1	-	-	-
Aliphatics >C10-C12	0.076	<0.01	0.76	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.012	<0.01	0.12	<0.1	-	-	-
Aromatics >EC10-EC12	0.051	<0.01	0.51	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.169	<0.01	1.69	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	6.37
Conductivity (µS/cm)	142.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87.2
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701746
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-J23
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00359	<0.0005	0.0359	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00142	<0.0003	0.0142	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0129	<0.003	0.129	<0.03	-	-	-
Nickel	0.000814	<0.0004	0.00814	<0.004	-	-	-
Selenium	0.00177	<0.001	0.0177	<0.01	-	-	-
Vanadium	0.0249	<0.001	0.249	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000384	<0.00001	0.00384	<0.0001	-	-	-
Acenaphthene by GCMS	0.00288	<0.000005	0.0288	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000246	<0.000005	0.00246	<0.00005	-	-	-
Fluoranthene by GCMS	0.000113	<0.000005	0.00113	<0.00005	-	-	-
Anthracene by GCMS	0.000468	<0.000005	0.00468	<0.00005	-	-	-
Phenanthrene by GCMS	0.00235	<0.000005	0.0235	<0.00005	-	-	-
Fluorene by GCMS	0.00251	<0.000005	0.0251	<0.00005	-	-	-
Chrysene by GCMS	0.0000477	<0.000005	0.000477	<0.00005	-	-	-
Pyrene by GCMS	0.000365	<0.000005	0.00365	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000276	<0.000005	0.000276	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00939	<0.000082	0.0939	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.085	<0.05	0.85	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	6.82
Conductivity (µS/cm)	117.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87.2
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701746
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-J23
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.04	<0.01	0.4	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.027	<0.01	0.27	<0.1	-	-	-
Aromatics >EC12-EC16	0.08	<0.01	0.8	<0.1	-	-	-
Aromatics >EC16-EC21	0.042	<0.01	0.42	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.122	<0.01	1.22	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.207	<0.01	2.07	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	6.82
Conductivity (µS/cm)	117.00
Temperature (°C)	20.50
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701762
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-I25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.201	<0.2	2.01	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.103	<0.05	1.03	<0.5	-	-	-
Arsenic	0.0044	<0.0005	0.044	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0127	<0.001	0.127	<0.01	-	-	-
Copper	0.00677	<0.0003	0.0677	<0.003	-	-	-
Lead	0.00535	<0.0002	0.0535	<0.002	-	-	-
Manganese	0.00731	<0.003	0.0731	<0.03	-	-	-
Nickel	0.00213	<0.0004	0.0213	<0.004	-	-	-
Selenium	0.0032	<0.001	0.032	<0.01	-	-	-
Vanadium	1.01	<0.001	10.1	<0.01	-	-	-
Zinc	0.00526	<0.001	0.0526	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.109	<0.019	1.09	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000163	<0.00001	0.000163	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000016	<0.000005	0.00016	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000281	<0.000005	0.000281	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000824	<0.000082	0.000824	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.64
Conductivity (µS/cm)	200.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701762
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-I25
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	9.64
Conductivity (µS/cm)	200.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701774
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-I25
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000736	<0.0005	0.00736	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0014	<0.0003	0.014	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0678	<0.003	0.678	<0.03	-	-	-
Nickel	0.000829	<0.0004	0.00829	<0.004	-	-	-
Selenium	0.00153	<0.001	0.0153	<0.01	-	-	-
Vanadium	0.00262	<0.001	0.0262	<0.01	-	-	-
Zinc	0.00169	<0.001	0.0169	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.725	<0.019	7.25	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.15
Conductivity (µS/cm)	165.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701774
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-I25
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	8.15
Conductivity (µS/cm)	165.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.120	**Natural Moisture Content (%)**	33.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	75
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701793
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-H21
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000156	<0.00001	0.000156	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00395	<0.0005	0.0395	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00132	<0.001	0.0132	<0.01	-	-	-
Copper	0.00437	<0.0003	0.0437	<0.003	-	-	-
Lead	0.00148	<0.0002	0.0148	<0.002	-	-	-
Manganese	0.017	<0.003	0.17	<0.03	-	-	-
Nickel	0.00189	<0.0004	0.0189	<0.004	-	-	-
Selenium	0.00112	<0.001	0.0112	<0.01	-	-	-
Vanadium	0.0152	<0.001	0.152	<0.01	-	-	-
Zinc	0.00589	<0.001	0.0589	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.371	<0.019	3.71	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Anthracene by GCMS	0.00000597	<0.000005	0.0000597	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000253	<0.000005	0.000253	<0.00005	-	-	-
Fluorene by GCMS	0.00000786	<0.000005	0.0000786	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000157	<0.000005	0.000157	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	7.14
Conductivity (µS/cm)	372.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.870

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.120	**Natural Moisture Content (%)**	33.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	75
Particle Size <4mm	>95%		

Case	
SDG	180608-18
Lab Sample Number(s)	17701793
Sampled Date	07-Jun-2018
Customer Sample Ref.	40A-H21
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Jun-2018
pH (pH Units)	7.14
Conductivity (µS/cm)	372.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.870

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Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180608-18	**Client Reference:**		**Report Number:**	460966
Location:	Llanwern	**Order Number:**	LLA444	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	17701793	17701803	17701762	17701774	17701783	17701694	17701737	17701746	17701755	17701704
Customer Sample Ref.	40A-H21	40A-H21-V	40A-I25	40A-I25	40A-I25-V	40A-J23	40A-J23	40A-J23	40A-J23-V	40A-Q21
AGS Ref.										
Depth	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	0.90 - 0.90	1.00 - 1.00	0.70 - 0.70	2.00 - 2.00	1.60 - 1.60	2.20 - 2.20	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)				15-Jun-2018		19-Jun-2018		20-Jun-2018		15-Jun-2018
Ammoniacal Nitrogen	14-Jun-2018		19-Jun-2018	14-Jun-2018		14-Jun-2018	19-Jun-2018	19-Jun-2018		14-Jun-2018
Ammonium Soil by Titration	14-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	14-Jun-2018	14-Jun-2018	18-Jun-2018	15-Jun-2018	14-Jun-2018
Anions by Kone (soil)				18-Jun-2018		19-Jun-2018		19-Jun-2018		18-Jun-2018
Asbestos ID in Solid Samples				15-Jun-2018		15-Jun-2018		18-Jun-2018		15-Jun-2018
Asbestos Quantification - Full						18-Jun-2018				18-Jun-2018
CEN 10:1 Leachate (1 Stage)	09-Jun-2018		09-Jun-2018	09-Jun-2018		09-Jun-2018	09-Jun-2018	18-Jun-2018		09-Jun-2018
CEN Readings	14-Jun-2018		14-Jun-2018	14-Jun-2018		14-Jun-2018	14-Jun-2018	19-Jun-2018		14-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	20-Jun-2018	19-Jun-2018	19-Jun-2018
Dissolved Metals by ICP-MS	18-Jun-2018		18-Jun-2018	18-Jun-2018		18-Jun-2018	18-Jun-2018	20-Jun-2018		18-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	13-Jun-2018		13-Jun-2018	13-Jun-2018		15-Jun-2018	13-Jun-2018	20-Jun-2018		13-Jun-2018
EPH CWG (Aliphatic) GC (S)	18-Jun-2018	14-Jun-2018	18-Jun-2018	13-Jun-2018	13-Jun-2018	15-Jun-2018	14-Jun-2018	18-Jun-2018	14-Jun-2018	14-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	13-Jun-2018		13-Jun-2018	13-Jun-2018		15-Jun-2018	13-Jun-2018	20-Jun-2018		13-Jun-2018
EPH CWG (Aromatic) GC (S)	18-Jun-2018	14-Jun-2018	18-Jun-2018	13-Jun-2018	13-Jun-2018	15-Jun-2018	14-Jun-2018	18-Jun-2018	14-Jun-2018	14-Jun-2018
GRO by GC-FID (S)	16-Jun-2018	16-Jun-2018	16-Jun-2018	18-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	18-Jun-2018
GRO by GC-FID (W)	13-Jun-2018		13-Jun-2018	18-Jun-2018		14-Jun-2018	18-Jun-2018	19-Jun-2018		13-Jun-2018
Mercury Dissolved	12-Jun-2018		12-Jun-2018	12-Jun-2018		12-Jun-2018	12-Jun-2018	19-Jun-2018		12-Jun-2018
Metals in solid samples by OES	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	12-Jun-2018	13-Jun-2018	18-Jun-2018	13-Jun-2018	14-Jun-2018
PAH by GCMS	19-Jun-2018	18-Jun-2018	14-Jun-2018	12-Jun-2018	11-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
PAH Spec MS - Aqueous (W)	13-Jun-2018		13-Jun-2018	13-Jun-2018		13-Jun-2018	13-Jun-2018	20-Jun-2018		13-Jun-2018
pH	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	17-Jun-2018	17-Jun-2018	18-Jun-2018
pH Value	13-Jun-2018		13-Jun-2018	13-Jun-2018		13-Jun-2018	13-Jun-2018	19-Jun-2018		13-Jun-2018
Phenols by HPLC (S)	14-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	13-Jun-2018	14-Jun-2018	14-Jun-2018	18-Jun-2018	13-Jun-2018	13-Jun-2018
Sample description	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018	08-Jun-2018
Total Organic Carbon	11-Jun-2018	18-Jun-2018	11-Jun-2018	18-Jun-2018	18-Jun-2018	15-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
Total Sulphate				12-Jun-2018		12-Jun-2018		19-Jun-2018		12-Jun-2018
Total Sulphur				13-Jun-2018		13-Jun-2018		18-Jun-2018		13-Jun-2018
TPH CWG (W)	13-Jun-2018		13-Jun-2018	18-Jun-2018		15-Jun-2018	18-Jun-2018	20-Jun-2018		13-Jun-2018
TPH CWG GC (S)	18-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	16-Jun-2018	18-Jun-2018
VOC MS (S)	14-Jun-2018	14-Jun-2018	14-Jun-2018	15-Jun-2018	14-Jun-2018	15-Jun-2018	15-Jun-2018	18-Jun-2018	14-Jun-2018	15-Jun-2018

Lab Sample No(s)	17701713	17701721	17701728
Customer Sample Ref.	40A-Q21-V	40A-R21	40A-R21-V
AGS Ref.			
Depth	3.00 - 3.00	0.50 - 0.50	0.70 - 0.70
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		15-Jun-2018	
Ammoniacal Nitrogen		19-Jun-2018	
Ammonium Soil by Titration	15-Jun-2018	14-Jun-2018	15-Jun-2018
Anions by Kone (soil)		19-Jun-2018	
Asbestos ID in Solid Samples		15-Jun-2018	
CEN 10:1 Leachate (1 Stage)		09-Jun-2018	
CEN Readings		14-Jun-2018	
Cyanide Comp/Free/Total/Thiocyanate	19-Jun-2018	19-Jun-2018	19-Jun-2018
Dissolved Metals by ICP-MS		18-Jun-2018	
EPH CWG (Aliphatic) Aqueous GC (W)		15-Jun-2018	
EPH CWG (Aliphatic) GC (S)	18-Jun-2018	13-Jun-2018	13-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)		15-Jun-2018	
EPH CWG (Aromatic) GC (S)	18-Jun-2018	13-Jun-2018	13-Jun-2018
GRO by GC-FID (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018
GRO by GC-FID (W)		18-Jun-2018	
Mercury Dissolved		12-Jun-2018	
Metals in solid samples by OES	13-Jun-2018	18-Jun-2018	13-Jun-2018
PAH by GCMS	14-Jun-2018	18-Jun-2018	18-Jun-2018
PAH Spec MS - Aqueous (W)		13-Jun-2018	
pH	18-Jun-2018	18-Jun-2018	18-Jun-2018
pH Value		13-Jun-2018	
Phenols by HPLC (S)	15-Jun-2018	13-Jun-2018	13-Jun-2018
Sample description	08-Jun-2018	08-Jun-2018	08-Jun-2018
Total Organic Carbon	18-Jun-2018	18-Jun-2018	11-Jun-2018
Total Sulphate		12-Jun-2018	
Total Sulphur		13-Jun-2018	
TPH CWG (W)		18-Jun-2018	
TPH CWG GC (S)	18-Jun-2018	18-Jun-2018	18-Jun-2018
VOC MS (S)	15-Jun-2018	15-Jun-2018	15-Jun-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	26 June 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180615-113
Your Reference:	
Location:	Llanwern
Report No:	461760

This report has been revised and directly supersedes 461458 in its entirety.

We received 56 samples on Friday June 15, 2018 and 56 of these samples were scheduled for analysis which was completed on Tuesday June 26, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17750562	40A-N13		0.50 - 0.50	14/06/2018
17750558	40A-N13		1.10 - 1.10	14/06/2018
17750574	40A-N13-V		1.00 - 1.00	14/06/2018
17750542	40A-N20-V		0.80 - 0.80	14/06/2018
17750549	40A-O14		0.50 - 0.50	14/06/2018
17750391	40A-O16		0.50 - 0.50	14/06/2018
17750397	40A-O16		1.00 - 1.00	14/06/2018
17750403	40A-O16		2.00 - 2.00	14/06/2018
17750411	40A-O16		3.00 - 3.00	14/06/2018
17750336	40A-O17		0.50 - 0.50	14/06/2018
17750343	40A-O17		1.00 - 1.00	14/06/2018
17750355	40A-O17		2.00 - 2.00	14/06/2018
17750363	40A-O17		3.00 - 3.00	14/06/2018
17750554	40A-O14-V		0.70 - 0.70	14/06/2018
17750425	40A-O16-V		3.60 - 3.60	14/06/2018
17750384	40A-O17-V		4.00 - 4.00	14/06/2018
17750579	40A-P13		0.40 - 0.40	14/06/2018
17750588	40A-P13		1.00 - 1.00	14/06/2018
17750614	40A-P13		1.50 - 1.50	14/06/2018
17750429	40A-P15		0.50 - 0.50	14/06/2018
17750436	40A-P15		1.00 - 1.00	14/06/2018
17750440	40A-P15		2.00 - 2.00	14/06/2018
17750445	40A-P15		3.00 - 3.00	14/06/2018
17750592	40A-P13-V		2.00 - 2.00	14/06/2018
17750462	40A-P15-V		4.20 - 4.20	14/06/2018
17750504	40A-Q18		0.20 - 0.20	14/06/2018
17750528	40A-Q20		0.80 - 0.80	14/06/2018
17750532	40A-Q20		1.50 - 1.50	14/06/2018
17750514	40A-Q18-V		0.30 - 0.30	14/06/2018
17750538	40A-Q20-V		1.80 - 1.80	14/06/2018
17750469	40A-R16		0.50 - 0.50	14/06/2018
17750474	40A-R16		1.00 - 1.00	14/06/2018
17750597	40A-R13-V		0.20 - 0.20	14/06/2018
17750480	40A-R16-V		1.40 - 1.40	14/06/2018
17750601	40A-S12		0.50 - 0.50	14/06/2018
17750606	40A-S12		1.00 - 1.00	14/06/2018
17750485	40A-S18		0.50 - 0.50	14/06/2018
17750492	40A-S18		1.00 - 1.00	14/06/2018
17750496	40A-S18		2.00 - 2.00	14/06/2018
17750610	40A-S12-V		1.80 - 1.80	14/06/2018
17750500	40A-S18-V		2.30 - 2.30	14/06/2018
17750281	RLS2-TP11		0.50 - 0.50	14/06/2018
17750455	RLS2-TP12		0.50 - 0.50	14/06/2018
17750583	RLS2-TP13		0.20 - 0.20	14/06/2018
17750622	RLS2-TP13		0.50 - 0.50	14/06/2018
17750635	RLS2-TP14		0.80 - 0.80	14/06/2018
17750640	RLS2-TP14		1.50 - 1.50	14/06/2018
17750294	RLS2-TP14		2.00 - 2.00	14/06/2018
17750306	RLS2-TP15		0.50 - 0.50	14/06/2018
17750313	RLS2-TP15		1.00 - 1.00	14/06/2018
17750319	RLS2-TP15		1.50 - 1.50	14/06/2018
17750370	RLS2-TP11-V		0.80 - 0.80	14/06/2018
17750522	RLS2-TP12-V		0.70 - 0.70	14/06/2018
17750631	RLS2-TP13-V		0.65 - 0.65	14/06/2018
17750300	RLS2-TP14-V		2.25 - 2.25	14/06/2018
17750328	RLS2-TP15-V		2.30 - 2.30	14/06/2018

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Maximum Sample/Coolbox Temperature (°C) :

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

14.8

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17750562		17750558			17750574		17750542		17750549			17750391			17750397		
Customer Sample Reference			40A-N13		40A-N13			40A-N13-V		40A-N20-V		40A-O14			40A-O16			40A-O16		
AGS Reference																				
Depth (m)			0.50 - 0.50		1.10 - 1.10			1.00 - 1.00		0.80 - 0.80		0.50 - 0.50			0.50 - 0.50			1.00 - 1.00		
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 23		X										X			X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 38	X				X						X			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 56		X		X			X		X			X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 23		X										X			X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 23	X										X			X					
Asbestos Quantification - Full	All	NDPs: 0 Tests: 10														X					
CEN Readings	All	NDPs: 0 Tests: 38	X				X						X			X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 94	X	X		X	X		X		X		X	X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 38	X				X						X			X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38	X				X						X			X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 56		X		X			X		X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38	X				X						X			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 56		X		X			X		X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 56			X			X		X		X			X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 38	X				X						X			X			X		

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17750562			17750558			17750574		17750542			17750549			17750391			17750397
Customer Sample Reference			40A-N13			40A-N13			40A-N13-V		40A-N20-V			40A-O14			40A-O16			40A-O16
AGS Reference																				
Depth (m)			0.50 - 0.50			1.10 - 1.10			1.00 - 1.00		0.80 - 0.80			0.50 - 0.50			0.50 - 0.50			1.00 - 1.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 38	X				X						X			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 56		X		X			X		X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 56		X		X			X		X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38	X				X						X			X			X		
pH	All	NDPs: 0 Tests: 56		X		X			X		X			X			X			X	
pH Value	All	NDPs: 0 Tests: 38	X				X						X			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 56		X		X			X		X			X			X			X	
Sample description	All	NDPs: 0 Tests: 56		X		X			X		X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 56		X		X			X		X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 23		X										X			X				
Total Sulphur	All	NDPs: 0 Tests: 23		X										X			X				
TPH CWG (W)	All	NDPs: 0 Tests: 38	X				X						X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 56		X		X			X		X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 56			X			X		X		X			X			X			X

17750425	40A-O16-V		3.60 - 3.60	250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X					
17750554	40A-O14-V		0.70 - 0.70	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X					
17750363	40A-O17		3.00 - 3.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X					
				1kg TUB	S	X			X		X							X					
17750355	40A-O17		2.00 - 2.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X					
				1kg TUB	S	X			X		X							X					
17750343	40A-O17		1.00 - 1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X					
				1kg TUB	S	X			X		X							X					
17750336	40A-O17		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X					
				1kg TUB	S	X			X		X							X					
17750411	40A-O16		3.00 - 3.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X					
				1kg TUB	S	X			X		X							X					
17750403	40A-O16		2.00 - 2.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X					
				1kg TUB	S	X			X		X							X					

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

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17750538	40A-Q20-V		1.80 - 1.80	250g Amber Jar (ALE210)	S				X					X				X			X			
17750514	40A-Q18-V		0.30 - 0.30	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S				X					X				X			X			
17750532	40A-Q20		1.50 - 1.50	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S				X					X				X			X			
				1kg TUB	S			X					X	X	X	X			X					X
17750528	40A-Q20		0.80 - 0.80	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S	X			X	X				X				X			X			
				1kg TUB	S			X			X		X	X	X	X			X					X
17750504	40A-Q18		0.20 - 0.20	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S	X			X	X				X				X			X			
				1kg TUB	S			X			X	X	X	X	X	X			X					X
17750462	40A-P15-V		4.20 - 4.20	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S				X					X				X			X			
17750592	40A-P13-V		2.00 - 2.00	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S				X					X				X			X			
17750445	40A-P15		3.00 - 3.00	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S				X					X				X			X			
				1kg TUB	S			X					X	X	X	X			X					X
17750440	40A-P15		2.00 - 2.00	60g VOC (ALE215)	S																	X		
				250g Amber Jar (ALE210)	S	X			X	X				X				X			X			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17750538	17750469			17750474			17750597	17750480			17750601			17750606			17750485
Customer Sample Reference			40A-Q20-V	40A-R16			40A-R16			40A-R13-V	40A-R16-V			40A-S12			40A-S12			40A-S18
AGS Reference																				
Depth (m)			1.80 - 1.80	0.50 - 0.50			1.00 - 1.00			0.20 - 0.20	1.40 - 1.40			0.50 - 0.50			1.00 - 1.00			0.50 - 0.50
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 23			X										X						X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 38		X			X							X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 56			X			X		X		X			X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 23			X										X						X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 23		X										X						X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 10																		X	
CEN Readings	All	NDPs: 0 Tests: 38		X			X							X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 94		X	X		X	X		X		X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 38		X			X							X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38		X			X							X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 56			X			X		X		X			X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38		X			X							X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 56			X			X		X		X			X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 56	X			X			X		X		X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 38		X			X							X			X			X	

17750622	RLS2-TP13		0.50 - 0.50	1kg TUB	S			x			x			x	x	x	x			x					x
17750583	RLS2-TP13		0.20 - 0.20	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S				x						x				x			x				
				1kg TUB	S			x						x	x	x	x			x					x
17750455	RLS2-TP12		0.50 - 0.50	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S	x			x	x					x				x			x				
				1kg TUB	S			x			x			x	x	x	x			x					x
17750281	RLS2-TP11		0.50 - 0.50	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S	x			x	x					x				x			x				
				1kg TUB	S			x			x	x		x	x	x	x			x					x
17750500	40A-S18-V		2.30 - 2.30	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S				x						x				x			x				
17750610	40A-S12-V		1.80 - 1.80	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S				x						x				x			x				
17750496	40A-S18		2.00 - 2.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S	x			x	x					x				x			x				
				1kg TUB	S			x			x			x	x	x	x			x					x
17750492	40A-S18		1.00 - 1.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S				x						x				x			x				
				1kg TUB	S			x						x	x	x	x			x					x
17750485	40A-S18		0.50 - 0.50	60g VOC (ALE215)	S																			x	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17750538	17750469			17750474			17750597		17750480			17750601			17750606		17750485
Customer Sample Reference			40A-Q20-V	40A-R16			40A-R16			40A-R13-V		40A-R16-V			40A-S12			40A-S12		40A-S18
AGS Reference																				
Depth (m)			1.80 - 1.80	0.50 - 0.50			1.00 - 1.00			0.20 - 0.20		1.40 - 1.40			0.50 - 0.50			1.00 - 1.00		0.50 - 0.50
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 38		X			X							X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 56			X			X		X		X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 56			X			X		X		X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38		X			X							X			X			X	
pH	All	NDPs: 0 Tests: 56			X			X		X		X			X			X			X
pH Value	All	NDPs: 0 Tests: 38		X			X							X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 56			X			X		X		X			X			X			X
Sample description	All	NDPs: 0 Tests: 56			X			X		X		X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 56			X			X		X		X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 23			X										X						X
Total Sulphur	All	NDPs: 0 Tests: 23			X										X						X
TPH CWG (W)	All	NDPs: 0 Tests: 38		X			X							X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 56			X			X		X		X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 56	X			X			X		X		X			X			X		

17750622	RLS2-TP13		0.50 - 0.50	1kg TUB	S	x			x		x						x				
17750583	RLS2-TP13		0.20 - 0.20	60g VOC (ALE215)	S																x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x		
				1kg TUB	S	x			x		x						x				
17750455	RLS2-TP12		0.50 - 0.50	60g VOC (ALE215)	S																x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x			x		x						x				
17750281	RLS2-TP11		0.50 - 0.50	60g VOC (ALE215)	S																x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x			x		x						x				
17750500	40A-S18-V		2.30 - 2.30	60g VOC (ALE215)	S																x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x		
17750610	40A-S12-V		1.80 - 1.80	60g VOC (ALE215)	S																x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x		
17750496	40A-S18		2.00 - 2.00	60g VOC (ALE215)	S																x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x			x		x						x				
17750492	40A-S18		1.00 - 1.00	60g VOC (ALE215)	S																x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x		
				1kg TUB	S	x			x		x						x				
17750485	40A-S18		0.50 - 0.50	60g VOC (ALE215)	S																x

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																	
			17750622		17750635			17750640			17750294			17750306			17750313			17750319
			Customer Sample Reference																	
			RLS2-TP13		RLS2-TP14			RLS2-TP14			RLS2-TP14			RLS2-TP15			RLS2-TP15			RLS2-TP15
			AGS Reference																	
			Depth (m)																	
			0.50 - 0.50		0.80 - 0.80			1.50 - 1.50			2.00 - 2.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50
			Container																	
			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type																	
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 23	X			X						X			X						X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 56	X			X			X			X			X				X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 23	X			X						X			X							X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 23			X						X			X						X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 10									X									X	
CEN Readings	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 94	X		X	X		X	X		X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 56	X			X			X			X			X				X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 56	X			X			X			X			X				X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 56		X			X			X			X			X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17750622		17750635			17750640			17750294			17750306			17750313			17750319
Customer Sample Reference			RLS2-TP13		RLS2-TP14			RLS2-TP14			RLS2-TP14			RLS2-TP15			RLS2-TP15			RLS2-TP15
AGS Reference																				
Depth (m)			0.50 - 0.50		0.80 - 0.80			1.50 - 1.50			2.00 - 2.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 56	X			X			X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 56	X			X			X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
pH	All	NDPs: 0 Tests: 56	X			X			X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 56	X			X			X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 56	X			X			X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 56	X			X			X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 23	X			X						X			X						X
Total Sulphur	All	NDPs: 0 Tests: 23	X			X						X			X						X
TPH CWG (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 56	X			X			X			X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 56		X			X			X			X			X			X		

17750328	RLS2-TP15-V		2.30 - 2.30	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X		X		X		X		X	X					X	
17750300	RLS2-TP14-V		2.25 - 2.25	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X		X		X		X		X	X					X	
17750631	RLS2-TP13-V		0.65 - 0.65	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X		X		X		X		X	X					X	
17750522	RLS2-TP12-V		0.70 - 0.70	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X		X		X		X		X	X					X	
17750370	RLS2-TP11-V		0.80 - 0.80	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X		X		X		X		X	X					X	
17750319	RLS2-TP15		1.50 - 1.50	60g VOC (ALE215)	S																	X

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17750558	40A-N13	1.10 - 1.10	Dark Brown	Clay	None	None
17750562	40A-N13	0.50 - 0.50	Dark Brown	Stone/Soil	Stones	Vegetation
17750574	40A-N13-V	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
17750542	40A-N20-V	0.80 - 0.80	Black	Silt Loam	Vegetation	None
17750549	40A-O14	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17750391	40A-O16	0.50 - 0.50	Dark Brown	Silt Loam	Stones	Crushed Brick
17750397	40A-O16	1.00 - 1.00	Dark Brown	Silt Loam	Stones	Vegetation
17750403	40A-O16	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
17750411	40A-O16	3.00 - 3.00	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
17750336	40A-O17	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
17750343	40A-O17	1.00 - 1.00	Dark Brown	Sand	Stones	Crushed Brick
17750355	40A-O17	2.00 - 2.00	Dark Brown	Silt Loam	Stones	None
17750363	40A-O17	3.00 - 3.00	Dark Brown	Silt Loam	Stones	Vegetation
17750554	40A-O14-V	0.70 - 0.70	Dark Brown	Clay	Vegetation	None
17750425	40A-O16-V	3.60 - 3.60	Grey	Silty Clay	None	None
17750384	40A-O17-V	4.00 - 4.00	Dark Brown	Silt Loam	Vegetation	None
17750579	40A-P13	0.40 - 0.40	Dark Brown	Sandy Loam	Stones	None
17750588	40A-P13	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	Concrete/Aggregate
17750614	40A-P13	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Brick
17750429	40A-P15	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
17750436	40A-P15	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
17750440	40A-P15	2.00 - 2.00	Grey	Silt Loam	Stones	Vegetation
17750445	40A-P15	3.00 - 3.00	Grey	Loamy Sand	Stones	Crushed Brick
17750592	40A-P13-V	2.00 - 2.00	Dark Brown	Silt Loam	Vegetation	None
17750462	40A-P15-V	4.20 - 4.20	Dark Brown	Silt Loam	Vegetation	None
17750504	40A-Q18	0.20 - 0.20	Dark Brown	Sand	Stones	Concrete/Aggregate
17750528	40A-Q20	0.80 - 0.80	Dark Brown	Sandy Loam	Stones	Vegetation
17750532	40A-Q20	1.50 - 1.50	Dark Brown	Stone/Soil	Stones	None
17750514	40A-Q18-V	0.30 - 0.30	Grey	Clay	Stones	Vegetation
17750538	40A-Q20-V	1.80 - 1.80	Dark Brown	Silt Loam	Stones	Vegetation
17750469	40A-R16	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
17750474	40A-R16	1.00 - 1.00	Dark Brown	Sandy Clay	Crushed Brick	Stones
17750597	40A-R13-V	0.20 - 0.20	Dark Brown	Clay	Vegetation	None
17750480	40A-R16-V	1.40 - 1.40	Dark Brown	Clay Loam	Vegetation	None
17750601	40A-S12	0.50 - 0.50	Dark Brown	Stone/Soil	Stones	None
17750606	40A-S12	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	None
17750485	40A-S18	0.50 - 0.50	Light Brown	Loamy Sand	Stones	None
17750492	40A-S18	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

			Colour	Description	Inclusions	Inclusions 2
17750496	40A-S18	2.00 - 2.00	Light Brown	Loamy Sand	Stones	None
17750610	40A-S12-V	1.80 - 1.80	Dark Brown	Clay	Stones	Vegetation
17750500	40A-S18-V	2.30 - 2.30	Dark Brown	Silty Clay	Vegetation	None
17750281	RLS2-TP11	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17750455	RLS2-TP12	0.50 - 0.50	Dark Brown	Silty Clay	Stones	Vegetation
17750583	RLS2-TP13	0.20 - 0.20	Dark Brown	Silt Loam	Stones	Vegetation
17750622	RLS2-TP13	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
17750294	RLS2-TP14	2.00 - 2.00	Dark Brown	Stone/Soil	Stones	None
17750635	RLS2-TP14	0.80 - 0.80	Dark Brown	Loamy Sand	Stones	None
17750640	RLS2-TP14	1.50 - 1.50	Dark Brown	Sand	Stones	Vegetation
17750306	RLS2-TP15	0.50 - 0.50	Dark Brown	Sand	Vegetation	Crushed Brick
17750313	RLS2-TP15	1.00 - 1.00	Dark Brown	Sand	Stones	Crushed Brick
17750319	RLS2-TP15	1.50 - 1.50	Dark Brown	Sand	Stones	Vegetation
17750370	RLS2-TP11-V	0.80 - 0.80	Grey	Clay	Vegetation	Stones
17750522	RLS2-TP12-V	0.70 - 0.70	Dark Brown	Silt Loam	Stones	Vegetation
17750631	RLS2-TP13-V	0.65 - 0.65	Grey	Clay	Vegetation	Stones
17750300	RLS2-TP14-V	2.25 - 2.25	Dark Brown	Sandy Silt Loam	Stones	None
17750328	RLS2-TP15-V	2.30 - 2.30	Black	Silty Clay Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N13	40A-N13	40A-N13-V	40A-N20-V	40A-O14	40A-O16
			Depth (m)	0.50 - 0.50	1.10 - 1.10	1.00 - 1.00	0.80 - 0.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750562	17750558	17750574	17750542	17750549	17750391
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.6	38	15	36	11	6.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	302 M	<12 M	297 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	0.0162 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.0866				0.389	0.23
Sulphate, Total potential	<0.06 %	TM132		0.26				1.17	0.69
Soil Organic Matter (SOM)	<0.35 %	TM132		4.86 #	6.59 #	2.57 #	5.34 #	3.14 #	3.88 #
pH	1 pH Units	TM133		7.44 #	6.97 M	7.57 M	7.49 M	9.23 M	10.2 M
Cyanide, Total	<1 mg/kg	TM153		1.34 #	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.42 #	16.1 M	8.1 M	13 M	15.9 M	7.01 M
Cadmium	<0.02 mg/kg	TM181		0.221 #	0.37 M	0.353 M	0.381 M	0.767 M	0.353 M
Chromium	<0.9 mg/kg	TM181		<0.9 #	40.8 M	10.1 M	39.6 M	14.2 M	55.5 M
Copper	<1.4 mg/kg	TM181		15.9 #	32.2 M	13 M	25.9 M	38.9 M	23.3 M
Iron	<1000 mg/kg	TM181		19300 #	29600 #	14700 #	26900 #	43300 #	53600 #
Lead	<0.7 mg/kg	TM181		11.3 #	33.3 M	15.9 M	32.1 M	74.3 M	48.1 M
Manganese	<0.13 mg/kg	TM181		426 #	243 M	406 M	243 M	2420 M	4150 M
Mercury	<0.14 mg/kg	TM181		<0.14 #	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		19.3 #	36.4 M	35 M	37.5 M	25.1 M	17.4 M
Selenium	<1 mg/kg	TM181		<1 #	1.73 #	1.24 #	1.32 #	2.59 #	2.2 #
Vanadium	<0.2 mg/kg	TM181		16.3 #	64.5 #	25.6 #	59.5 #	50.7 #	99.7 #
Zinc	<1.9 mg/kg	TM181		40.7 #	122 M	74.2 M	115 M	145 M	187 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.073				0.454	0.33
Calcium	<21 mg/kg	TM224		3490				115000	104000
Magnesium	<8 mg/kg	TM224		1470				12900	12800
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0609 #				0.567 M	0.192 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							N/C
Asbestos Quantification - Total - %	<0.001 %	TM304							<0.001 #

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O16	40A-O16	40A-O16	40A-O17	40A-O17	40A-O17
			Depth (m)	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750397	17750403	17750411	17750336	17750343	17750355
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.1	12	12	7.7	8.8	9.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.16 M	0.147 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0114 M	0.0113 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0228 M	0.0226 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.194 M	0.181 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.323	0.296		0.223
Sulphate, Total potential	<0.06 %	TM132				0.969	0.888		0.669
Soil Organic Matter (SOM)	<0.35 %	TM132		3.15 #	6.55 #	5.45 #	1.97 #	3.78 #	2.22 #
pH	1 pH Units	TM133		10.5 M	11.3 M	11.3 M	11 M	11.3 M	11.3 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.29 M	12.1 M	9.59 M	10.1 M	40 M	7.66 M
Cadmium	<0.02 mg/kg	TM181		1.89 M	1.1 M	0.938 M	0.859 M	0.875 M	1.46 M
Chromium	<0.9 mg/kg	TM181		99.6 M	78.1 M	56.1 M	128 M	76.5 M	173 M
Copper	<1.4 mg/kg	TM181		24.8 M	48.1 M	318 M	63 M	37.8 M	35.9 M
Iron	<1000 mg/kg	TM181		46200 #	59700 #	35100 #	55400 #	55100 #	70400 #
Lead	<0.7 mg/kg	TM181		787 M	123 M	69.7 M	112 M	91.2 M	76.2 M
Manganese	<0.13 mg/kg	TM181		9740 M	6780 M	4160 M	8740 M	43500 M	12900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	0.171 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		10.9 M	19.3 M	41.8 M	12.7 M	33.7 M	13.9 M
Selenium	<1 mg/kg	TM181		5.95 #	3.21 #	2.59 #	3.58 #	16.1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		185 #	242 #	116 #	156 #	117 #	305 #
Zinc	<1.9 mg/kg	TM181		165 M	336 M	251 M	238 M	225 M	262 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.393	0.533		0.315
Calcium	<21 mg/kg	TM224				94700	176000		140000
Magnesium	<8 mg/kg	TM224				12200	33200		13400
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.183 M	0.161 M		0.151 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304					0.0023 #		<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304					<0.001 #		<0.001 #
Additional Asbestos Components (Using TM048)		TM304					None #		None #
Analysts Comments		TM304					N/A		N/C
Asbestos Quantification - Total - %	<0.001 %	TM304					0.0023 #		<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O17	40A-O14-V	40A-O16-V	40A-O17-V	40A-P13	40A-P13
			Depth (m)	3.00 - 3.00	0.70 - 0.70	3.60 - 3.60	4.00 - 4.00	0.40 - 0.40	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750363	17750554	17750425	17750384	17750579	17750588
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.4	39	35	67	9.6	4.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	178 M	87.9 M	141 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132							0.0634
Sulphate, Total potential	<0.06 %	TM132							0.19
Soil Organic Matter (SOM)	<0.35 %	TM132		2.64 #	7.29 #	4.38 #	64.1 #	1.18 #	1.07 #
pH	1 pH Units	TM133		11.3 M	7.46 M	7.84 M	7.32 M	8.76 M	9.14 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.39 M	15.5 M	12.9 M	5.55 M	14.1 M	8.3 M
Cadmium	<0.02 mg/kg	TM181		0.435 M	0.52 M	0.466 M	0.236 M	1.15 M	0.24 M
Chromium	<0.9 mg/kg	TM181		40.4 M	39.9 M	30.4 M	15.6 M	16.5 M	3.83 M
Copper	<1.4 mg/kg	TM181		13 M	33 M	17.8 M	30.9 M	23.7 M	8.5 M
Iron	<1000 mg/kg	TM181		24300 #	26100 #	33500 #	9170 #	54500 #	6400 #
Lead	<0.7 mg/kg	TM181		33.9 M	38.8 M	29.6 M	7.14 M	95.5 M	14.4 M
Manganese	<0.13 mg/kg	TM181		3390 M	351 M	340 M	388 M	3910 M	319 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		9.4 M	33.2 M	38 M	20.4 M	19.2 M	7.48 M
Selenium	<1 mg/kg	TM181		2.17 #	1.48 #	<1 #	2.58 #	2.38 #	<1 #
Vanadium	<0.2 mg/kg	TM181		56.5 #	63.5 #	51.4 #	32.1 #	37.8 #	8.59 #
Zinc	<1.9 mg/kg	TM181		126 M	128 M	117 M	62.4 M	252 M	22.3 M
Sulphate, acid soluble (total)	<0.02 %	TM221							0.04
Calcium	<21 mg/kg	TM224							284000
Magnesium	<8 mg/kg	TM224							5290
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243							0.0424 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P13	40A-P15	40A-P15	40A-P15	40A-P15	40A-P13-V
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750614	17750429	17750436	17750440	17750445	17750592
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	9.8	10	10	8.1	75
Exchangeable Ammonia as N	<12 mg/kg	TM024		22.6 M	<12 M	<12 M	21.5 M	13.2 M	184 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0222 M	0.0109 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.33		0.448	0.176		
Sulphate, Total potential	<0.06 %	TM132		0.99		1.34	0.528		
Soil Organic Matter (SOM)	<0.35 %	TM132		3.83 #	2.57 #	12.3 #	3.83 #	4.38 #	46 #
pH	1 pH Units	TM133		8.4 M	11.2 M	11.2 M	10.6 M	10.6 M	6.64 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.2 M	8.85 M	10.4 M	7.48 M	8.11 M	31.2 M
Cadmium	<0.02 mg/kg	TM181		0.342 M	1.09 M	0.647 M	0.465 M	0.528 M	0.58 M
Chromium	<0.9 mg/kg	TM181		8.37 M	77.4 M	54.9 M	33 M	24.8 M	13.4 M
Copper	<1.4 mg/kg	TM181		24.9 M	27.9 M	31.3 M	18.2 M	24.7 M	34.1 M
Iron	<1000 mg/kg	TM181		16100 #	48500 #	28600 #	24300 #	21600 #	27800 #
Lead	<0.7 mg/kg	TM181		16.6 M	67.8 M	57.2 M	30.6 M	45.5 M	9.86 M
Manganese	<0.13 mg/kg	TM181		484 M	6810 M	3040 M	3810 M	1990 M	390 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		19.1 M	14.8 M	17 M	14.3 M	16.8 M	57.9 M
Selenium	<1 mg/kg	TM181		1.41 #	3.4 #	2.83 #	1.59 #	2.57 #	3.26 #
Vanadium	<0.2 mg/kg	TM181		16.9 #	139 #	71.2 #	58.7 #	48.6 #	49.1 #
Zinc	<1.9 mg/kg	TM181		58.2 M	470 M	233 M	83.4 M	140 M	75.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.168		0.453	0.182		
Calcium	<21 mg/kg	TM224		49400		91300	145000		
Magnesium	<8 mg/kg	TM224		16300		12100	15600		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0514 M		0.222 M	0.121 M		
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				<0.001 #	<0.001 #		
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #	<0.001 #		
Additional Asbestos Components (Using TM048)		TM304				None #	None #		
Analysts Comments		TM304				N/C	N/C		
Asbestos Quantification - Total - %	<0.001 %	TM304				<0.001 #	<0.001 #		

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P15-V	40A-Q18	40A-Q20	40A-Q20	40A-Q18-V	40A-Q20-V
			Depth (m)	4.20 - 4.20	0.20 - 0.20	0.80 - 0.80	1.50 - 1.50	0.30 - 0.30	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750462	17750504	17750528	17750532	17750514	17750538
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		79	7.2	14	12	29	54
Exchangeable Ammonia as N	<12 mg/kg	TM024		476 M	<12 M	<12 M	62.9 #	<12 M	779 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0116 M	<0.01 #	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 #	<0.015 M	0.176 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 #	<0.035 M	0.176 M
Sulphur, Total	<0.02 %	TM132			0.149	0.239			
Sulphate, Total potential	<0.06 %	TM132			0.447	0.717			
Soil Organic Matter (SOM)	<0.35 %	TM132		58.6 #	0.469 #	3.19 #	2.83 #	3.53 #	26.4 #
pH	1 pH Units	TM133		7.62 M	11.9 M	8.71 M	8.41 #	7.7 M	7.71 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 #	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11 M	6.84 M	10.6 M	6.77 #	8.79 M	14.9 M
Cadmium	<0.02 mg/kg	TM181		0.266 M	0.485 M	0.384 M	0.229 #	0.424 M	0.378 M
Chromium	<0.9 mg/kg	TM181		12.7 M	25.8 M	27.8 M	9.45 #	60.6 M	29.6 M
Copper	<1.4 mg/kg	TM181		17.1 M	10.1 M	22.2 M	42 #	54.2 M	30.9 M
Iron	<1000 mg/kg	TM181		20300 #	55000 #	31000 #	24000 #	35900 #	17300 #
Lead	<0.7 mg/kg	TM181		9.55 M	21.2 M	25.9 M	28.5 #	42.2 M	16.7 M
Manganese	<0.13 mg/kg	TM181		428 M	2490 M	2300 M	535 #	489 M	180 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 #	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		26.1 M	7.78 M	18.5 M	33.1 #	52.8 M	34.9 M
Selenium	<1 mg/kg	TM181		2.91 #	<1 #	2.46 #	1.17 #	1.61 #	2.74 #
Vanadium	<0.2 mg/kg	TM181		28.6 #	43.1 #	80.9 #	28 #	59.8 #	49.1 #
Zinc	<1.9 mg/kg	TM181		27.6 M	79.7 M	53.8 M	102 #	1270 M	53.9 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.326	0.75			
Calcium	<21 mg/kg	TM224			203000	86800			
Magnesium	<8 mg/kg	TM224			12400	11500			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.275 M	0.0797 M			
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			0.0015 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			N/A				
Asbestos Quantification - Total - %	<0.001 %	TM304			0.0015 #				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R16	40A-R16	40A-R13-V	40A-R16-V	40A-S12	40A-S12
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.20 - 0.20	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750469	17750474	17750597	17750480	17750601	17750606
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	10	27	75	13	9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	280 M	<12 #	32.7 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 #	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 #	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.478				0.134	
Sulphate, Total potential	<0.06 %	TM132		1.43				0.402	
Soil Organic Matter (SOM)	<0.35 %	TM132		2.1 #	2.53 #	1.7 #	50.2 #	4.69 #	2.21 #
pH	1 pH Units	TM133		11.5 M	11.4 M	6.38 M	6.55 M	8.79 #	8.43 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 #	<1 M
Arsenic	<0.6 mg/kg	TM181		6.68 M	11.3 M	8.9 M	14.2 M	10.2 #	6.82 M
Cadmium	<0.02 mg/kg	TM181		0.743 M	1.5 M	0.229 M	0.281 M	0.399 #	0.336 M
Chromium	<0.9 mg/kg	TM181		91.6 M	222 M	37.9 M	11 M	10.7 #	0.989 M
Copper	<1.4 mg/kg	TM181		19.6 M	75.3 M	15.6 M	17.5 M	22.9 #	9.21 M
Iron	<1000 mg/kg	TM181		54600 #	103000 #	28700 #	16100 #	32100 #	21000 #
Lead	<0.7 mg/kg	TM181		49.4 M	91.4 M	29.5 M	6.62 M	25.5 #	13.1 M
Manganese	<0.13 mg/kg	TM181		14100 M	18200 M	293 M	230 M	1560 #	1260 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 #	<0.14 M
Nickel	<0.2 mg/kg	TM181		12 M	65.7 M	42 M	30.7 M	44.6 #	10.2 M
Selenium	<1 mg/kg	TM181		5.2 #	<10 #	<1 #	1.98 #	1.45 #	<1 #
Vanadium	<0.2 mg/kg	TM181		157 #	329 #	60.6 #	28.4 #	35.9 #	14.2 #
Zinc	<1.9 mg/kg	TM181		170 M	476 M	98.3 M	21.5 M	128 #	31.7 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.588				0.327	
Calcium	<21 mg/kg	TM224		255000				24700	
Magnesium	<8 mg/kg	TM224		17700				6420	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.316 M				0.0582 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-S18	40A-S18	40A-S18	40A-S12-V	40A-S18-V	RLS2-TP11
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	1.80 - 1.80	2.30 - 2.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750485	17750492	17750496	17750610	17750500	17750281
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	11	9.3	42	39	7.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	19.3 M	426 M	103 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0174 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.473		0.372			0.096
Sulphate, Total potential	<0.06 %	TM132		1.42		1.12			0.288
Soil Organic Matter (SOM)	<0.35 %	TM132		2.1 #	3.91 #	1.18 #	11.2 #	8.93 #	5.72 #
pH	1 pH Units	TM133		10.9 M	9.99 M	8.45 M	7.07 M	7.2 M	8.57 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.27 M	45.1 M	15.5 M	18.3 M	21 M	24.2 M
Cadmium	<0.02 mg/kg	TM181		0.221 M	1.84 M	0.998 M	0.757 M	0.735 M	0.783 M
Chromium	<0.9 mg/kg	TM181		35.9 M	24.2 M	<9 M	40.9 M	35.7 M	206 M
Copper	<1.4 mg/kg	TM181		23.8 M	18.5 M	<14 M	29.6 M	27.7 M	128 M
Iron	<1000 mg/kg	TM181		53300 #	22400 #	78100 #	23100 #	24700 #	45300 #
Lead	<0.7 mg/kg	TM181		24.9 M	34.8 M	40.6 M	49.8 M	51.5 M	110 M
Manganese	<0.13 mg/kg	TM181		7520 M	2750 M	773 M	228 M	262 M	5600 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M	1.11 M
Nickel	<0.2 mg/kg	TM181		13.9 M	18.3 M	18.8 M	30.9 M	30.4 M	19.1 M
Selenium	<1 mg/kg	TM181		5.3 #	2.53 #	<10 #	1.5 #	1.4 #	2.57 #
Vanadium	<0.2 mg/kg	TM181		108 #	49.2 #	16.5 #	70 #	58.3 #	98.4 #
Zinc	<1.9 mg/kg	TM181		49.9 M	447 M	75.4 M	146 M	159 M	388 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.959		0.0552			0.14
Calcium	<21 mg/kg	TM224		144000		107000			121000
Magnesium	<8 mg/kg	TM224		17200		29600			43300
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.156 M		0.096 M			0.0663 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					<0.001 #
Additional Asbestos Components (Using TM048)		TM304		None #					None #
Analysts Comments		TM304		N/C					N/C
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RLS2-TP12	RLS2-TP13	RLS2-TP13	RLS2-TP14	RLS2-TP14	RLS2-TP14
			Depth (m)	0.50 - 0.50	0.20 - 0.20	0.50 - 0.50	0.80 - 0.80	1.50 - 1.50	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750455	17750583	17750622	17750635	17750640	17750294
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		18	9.2	27	9.1	10	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0137 M	<0.01 M	0.0111 M	<0.01 #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.0333 M	<0.015 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.0444 M	<0.035 #
Sulphur, Total	<0.02 %	TM132		0.125		0.684	0.286		0.438
Sulphate, Total potential	<0.06 %	TM132		0.375		2.05	0.858		1.31
Soil Organic Matter (SOM)	<0.35 %	TM132		2.59 #	1.18 #	17.4 #	4.22 #	24.8 #	2.07 #
pH	1 pH Units	TM133		8.11 M	7.72 M	7.38 M	11.3 M	11.7 M	11.3 #
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 #
Arsenic	<0.6 mg/kg	TM181		8.16 M	12.4 M	16.4 M	7.12 M	8.03 M	4.84 #
Cadmium	<0.02 mg/kg	TM181		0.356 M	0.76 M	0.271 M	0.513 M	0.553 M	0.676 #
Chromium	<0.9 mg/kg	TM181		36 M	4.03 M	4.89 M	326 M	47.1 M	31.9 #
Copper	<1.4 mg/kg	TM181		15.2 M	9.35 M	20.6 M	36 M	39.2 M	14 #
Iron	<1000 mg/kg	TM181		24500 #	55200 #	23800 #	77800 #	46700 #	22600 #
Lead	<0.7 mg/kg	TM181		24.2 M	20.2 M	20.6 M	47.3 M	48.8 M	49 #
Manganese	<0.13 mg/kg	TM181		2630 M	2690 M	625 M	28600 M	3910 M	3770 #
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	2.69 M	<0.14 M	<0.14 #
Nickel	<0.2 mg/kg	TM181		15.8 M	14 M	20.4 M	11.6 M	20.4 M	10.9 #
Selenium	<1 mg/kg	TM181		1.81 #	2.22 #	1 #	6.33 #	2.07 #	4.1 #
Vanadium	<0.2 mg/kg	TM181		67.6 #	26.6 #	17.9 #	248 #	82.5 #	54.8 #
Zinc	<1.9 mg/kg	TM181		84.4 M	67.5 M	42.7 M	146 M	109 M	109 #
Sulphate, acid soluble (total)	<0.02 %	TM221		0.251		0.161	0.669		1
Calcium	<21 mg/kg	TM224		150000		71100	194000		156000
Magnesium	<8 mg/kg	TM224		10000		9530	21700		27200
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.141 M		0.0502 M	0.131 M		0.26 #
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							N/C
Asbestos Quantification - Total - %	<0.001 %	TM304							<0.001 #

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RLS2-TP15	RLS2-TP15	RLS2-TP15	RLS2-TP11-V	RLS2-TP12-V	RLS2-TP13-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.80 - 0.80	0.70 - 0.70	0.65 - 0.65
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750306	17750313	17750319	17750370	17750522	17750631
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.9	12	9.4	40	53	38
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	469 M	<12 M	236 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.011 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.379		0.287			
Sulphate, Total potential	<0.06 %	TM132		1.14		0.861			
Soil Organic Matter (SOM)	<0.35 %	TM132		3.1 #	5.79 #	2.83 #	6.72 #	15.9 #	7.14 #
pH	1 pH Units	TM133		11 M	11.1 M	11.8 M	7.15 M	6.98 M	6.89 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	8.47 M	7.29 M	16.3 M	9.36 M	11.8 M
Cadmium	<0.02 mg/kg	TM181		0.998 M	0.867 M	0.611 M	0.379 M	0.269 M	0.415 M
Chromium	<0.9 mg/kg	TM181		249 M	89.1 M	52.6 M	40 M	32 M	33.6 M
Copper	<1.4 mg/kg	TM181		22 M	25.9 M	18.3 M	34.1 M	21.8 M	26.8 M
Iron	<1000 mg/kg	TM181		88600 #	44100 #	32300 #	30300 #	21800 #	22500 #
Lead	<0.7 mg/kg	TM181		67.9 M	104 M	49.1 M	134 M	19.3 M	33.4 M
Manganese	<0.13 mg/kg	TM181		16100 M	4450 M	4180 M	414 M	164 M	341 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		13.9 M	16.2 M	13.5 M	36.2 M	29 M	31.6 M
Selenium	<1 mg/kg	TM181		<10 #	3.44 #	2.01 #	1.66 #	1.66 #	1.41 #
Vanadium	<0.2 mg/kg	TM181		256 #	152 #	71.4 #	61.2 #	48.6 #	53 #
Zinc	<1.9 mg/kg	TM181		145 M	353 M	267 M	143 M	81.3 M	96.6 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.544		0.529			
Calcium	<21 mg/kg	TM224		178000		161000			
Magnesium	<8 mg/kg	TM224		16100		15800			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.162 M		0.103 M			
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				<0.001 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #			
Additional Asbestos Components (Using TM048)		TM304				None #			
Analysts Comments		TM304				N/C			
Asbestos Quantification - Total - %	<0.001 %	TM304				<0.001 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RLS2-TP14-V	RLS2-TP15-V				
			Depth (m)	2.25 - 2.25	2.30 - 2.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	14/06/2018	14/06/2018				
			Sample Time	00:00	00:00				
			Date Received	15/06/2018	15/06/2018				
			SDG Ref	180615-113	180615-113				
			Lab Sample No.(s)	17750300	17750328				
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		56	36				
Exchangeable Ammonia as N	<12 mg/kg	TM024		153 M	292 M				
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M				
Soil Organic Matter (SOM)	<0.35 %	TM132		26.5 #	5.86 #				
pH	1 pH Units	TM133		6.36 M	7.53 M				
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M				
Arsenic	<0.6 mg/kg	TM181		11.3 M	15.5 M				
Cadmium	<0.02 mg/kg	TM181		0.607 M	0.438 M				
Chromium	<0.9 mg/kg	TM181		30.7 M	39.2 M				
Copper	<1.4 mg/kg	TM181		37 M	26.2 M				
Iron	<1000 mg/kg	TM181		20400 #	22300 #				
Lead	<0.7 mg/kg	TM181		21.9 M	35.3 M				
Manganese	<0.13 mg/kg	TM181		185 M	240 M				
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M				
Nickel	<0.2 mg/kg	TM181		36.6 M	34.1 M				
Selenium	<1 mg/kg	TM181		2.86 #	1.29 #				
Vanadium	<0.2 mg/kg	TM181		47.5 #	64.7 #				
Zinc	<1.9 mg/kg	TM181		79.9 M	122 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N13	40A-N13	40A-N13-V	40A-N20-V	40A-O14	40A-O16
			Depth (m)	0.50 - 0.50	1.10 - 1.10	1.00 - 1.00	0.80 - 0.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750562	17750558	17750574	17750542	17750549	17750391
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.7	85.9	101	101	102	104
Acenaphthene-d10 % recovery**	%	TM218		86.4	90.4	104	87.6	93.9	94.6
Phenanthrene-d10 % recovery**	%	TM218		83.5	94.5	95	76.2	85.8	94.4
Chrysene-d12 % recovery**	%	TM218		84.1	78	90.6	98.2	97	100
Perylene-d12 % recovery**	%	TM218		84.2	80.2	97	99.7	98.9	103
Naphthalene	<0.009 mg/kg	TM218		0.0327 #	<0.009 M	<0.009 M	<0.009 M	0.0302 M	0.0777 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 #	<0.012 M	<0.012 M	<0.012 M	<0.012 M	0.0138 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 #	<0.008 M	<0.008 M	<0.008 M	0.0123 M	0.022 M
Fluorene	<0.01 mg/kg	TM218		0.0175 #	<0.01 M	<0.01 M	<0.01 M	0.0195 M	0.0179 M
Phenanthrene	<0.015 mg/kg	TM218		0.0675 #	<0.015 M	<0.015 M	<0.015 M	0.104 M	0.238 M
Anthracene	<0.016 mg/kg	TM218		<0.016 #	<0.016 M	<0.016 M	<0.016 M	0.0227 M	0.0807 M
Fluoranthene	<0.017 mg/kg	TM218		0.0232 #	<0.017 M	0.11 M	<0.017 M	0.146 M	0.43 M
Pyrene	<0.015 mg/kg	TM218		0.0225 #	<0.015 M	0.0951 M	<0.015 M	0.132 M	0.392 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0166 #	<0.014 M	0.0283 M	<0.014 M	0.0865 M	0.251 M
Chrysene	<0.01 mg/kg	TM218		0.0231 #	<0.01 M	0.0362 M	<0.01 M	0.111 M	0.281 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0239 #	<0.015 M	0.0397 M	<0.015 M	0.162 M	0.447 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 #	<0.014 M	<0.014 M	<0.014 M	0.0589 M	0.173 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 #	<0.015 M	<0.015 M	<0.015 M	0.0746 M	0.223 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 #	<0.018 M	<0.018 M	<0.018 M	0.0537 M	0.161 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 #	<0.023 M	<0.023 M	<0.023 M	<0.023 M	0.0446 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 #	<0.024 M	<0.024 M	<0.024 M	0.075 M	0.214 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.227	<0.118	0.309	<0.118	1.09	3.07

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O16	40A-O16	40A-O16	40A-O17	40A-O17	40A-O17
			Depth (m)	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750397	17750403	17750411	17750336	17750343	17750355
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		102	89.1	93.6	95.9	89.9	80.8
Acenaphthene-d10 % recovery**	%	TM218		91.5	92.3	95.7	83.9	82.3	83.9
Phenanthrene-d10 % recovery**	%	TM218		84.1	94.8	99.5	87.2	87.2	87.2
Chrysene-d12 % recovery**	%	TM218		86.9	79.8	107	94.3	77.1	71.4
Perylene-d12 % recovery**	%	TM218		87.7	74.2	93.3	96.4	76.5	70.7
Naphthalene	<0.009 mg/kg	TM218		0.0481 M	0.0774 M	0.054 M	0.0744 M	<0.045 M	0.0755 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0146 M	<0.012 M	0.0313 M	<0.06 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		0.0132 M	0.0794 M	0.0227 M	0.0287 M	<0.04 M	0.0477 M
Fluorene	<0.01 mg/kg	TM218		0.0129 M	0.05 M	0.0217 M	0.0307 M	<0.05 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		0.215 M	1.56 M	0.367 M	0.329 M	0.13 M	0.512 M
Anthracene	<0.016 mg/kg	TM218		0.0533 M	0.29 M	0.0813 M	0.104 M	<0.08 M	0.141 M
Fluoranthene	<0.017 mg/kg	TM218		0.308 M	1.28 M	0.498 M	0.781 M	0.228 M	0.677 M
Pyrene	<0.015 mg/kg	TM218		0.292 M	1.07 M	0.437 M	0.802 M	0.246 M	0.621 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.165 M	0.386 M	0.293 M	0.473 M	0.111 M	0.29 M
Chrysene	<0.01 mg/kg	TM218		0.196 M	0.448 M	0.301 M	0.519 M	0.141 M	0.298 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.278 M	0.529 M	0.352 M	0.875 M	0.161 M	0.459 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0896 M	0.192 M	0.0998 M	0.286 M	<0.07 M	0.153 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.17 M	0.273 M	0.212 M	0.523 M	0.117 M	0.249 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.12 M	0.259 M	0.144 M	0.333 M	<0.09 M	0.25 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0335 M	0.044 M	0.0407 M	0.095 M	<0.115 M	<0.115 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.152 M	0.23 M	0.152 M	0.431 M	<0.12 M	0.226 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2.15	6.78	3.08	5.72	1.13	4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O17	40A-O14-V	40A-O16-V	40A-O17-V	40A-P13	40A-P13
			Depth (m)	3.00 - 3.00	0.70 - 0.70	3.60 - 3.60	4.00 - 4.00	0.40 - 0.40	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750363	17750554	17750425	17750384	17750579	17750588
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		106	102	85.9	106	88.8	94.8
Acenaphthene-d10 % recovery**	%	TM218		91.7	92.1	84.8	94.9	92.4	93.5
Phenanthrene-d10 % recovery**	%	TM218		87.5	85.6	89.9	90.2	93.4	97.9
Chrysene-d12 % recovery**	%	TM218		96.8	97.5	99.7	98.5	78	113
Perylene-d12 % recovery**	%	TM218		100	104	90.2	102	72.6	101
Naphthalene	<0.009 mg/kg	TM218		0.0727 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M	0.0239 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.024 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0538 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	0.0241 M
Fluorene	<0.01 mg/kg	TM218		0.0303 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.041 M
Phenanthrene	<0.015 mg/kg	TM218		0.424 M	<0.015 M	<0.015 M	<0.015 M	0.029 M	0.498 M
Anthracene	<0.016 mg/kg	TM218		0.0878 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M	0.13 M
Fluoranthene	<0.017 mg/kg	TM218		0.522 M	<0.017 M	<0.017 M	<0.017 M	0.0335 M	1.1 M
Pyrene	<0.015 mg/kg	TM218		0.5 M	<0.015 M	<0.015 M	<0.015 M	0.0356 M	0.83 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.28 M	<0.014 M	<0.014 M	<0.014 M	0.0232 M	1.06 M
Chrysene	<0.01 mg/kg	TM218		0.313 M	<0.01 M	<0.01 M	<0.01 M	0.0303 M	0.865 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.449 M	<0.015 M	<0.015 M	<0.015 M	0.0393 M	0.89 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.142 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M	0.455 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.249 M	<0.015 M	<0.015 M	<0.015 M	0.0212 M	0.839 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.165 M	<0.018 M	<0.018 M	<0.018 M	0.0241 M	0.428 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.046 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	0.179 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.248 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	0.431 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.54	<0.118	<0.118	<0.118	0.236	7.79

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P13	40A-P15	40A-P15	40A-P15	40A-P15	40A-P13-V
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750614	17750429	17750436	17750440	17750445	17750592
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.9	86.3	98	89.9	91.5	92.1
Acenaphthene-d10 % recovery**	%	TM218		84.5	91.5	88.9	90.1	91	95.4
Phenanthrene-d10 % recovery**	%	TM218		83.7	95.7	87.8	85.7	99.5	100
Chrysene-d12 % recovery**	%	TM218		72.9	75.3	104	91	108	82.8
Perylene-d12 % recovery**	%	TM218		75.1	75	104	94	90.6	74.6
Naphthalene	<0.009 mg/kg	TM218		0.0349 M	0.0803 M	0.0472 M	0.0445 M	0.0656 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0135 M	0.0188 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0276 M	0.0204 M	0.0217 M	0.0892 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0252 M	0.0214 M	0.0294 M	0.0812 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.0931 M	0.314 M	0.266 M	0.182 M	0.868 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.0577 M	0.0502 M	0.0195 M	0.137 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	0.488 M	0.5 M	0.185 M	0.857 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	0.564 M	0.527 M	0.176 M	0.751 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	0.284 M	0.288 M	0.101 M	0.396 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0212 M	0.3 M	0.319 M	0.11 M	0.388 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	0.484 M	0.423 M	0.137 M	0.407 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.16 M	0.134 M	0.0667 M	0.18 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	0.295 M	0.284 M	0.117 M	0.33 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.268 M	0.194 M	0.104 M	0.195 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.0635 M	0.047 M	<0.023 M	0.0434 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.26 M	0.229 M	0.135 M	0.216 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.149	3.68	3.37	1.43	5.01	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P15-V	40A-Q18	40A-Q20	40A-Q20	40A-Q18-V	40A-Q20-V
			Depth (m)	4.20 - 4.20	0.20 - 0.20	0.80 - 0.80	1.50 - 1.50	0.30 - 0.30	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750462	17750504	17750528	17750532	17750514	17750538
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		99.7	94.1	83.8	92.9	80.6	97.1
Acenaphthene-d10 % recovery**	%	TM218		97.3	92.4	88.4	87.3	83.2	95.6
Phenanthrene-d10 % recovery**	%	TM218		98	97.3	95.1	89.1	90.1	94.7
Chrysene-d12 % recovery**	%	TM218		97.9	107	78.3	84	89.4	87.8
Perylene-d12 % recovery**	%	TM218		99.1	94.6	77	82.3	92.9	88.1
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.0151 M	0.013 M	0.0364 #	<0.009 M	0.0241 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 #	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	<0.008 #	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	0.014 #	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	0.0906 M	0.053 M	0.117 #	<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	<0.016 M	<0.016 #	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	0.0756 M	0.0309 M	0.029 #	<0.017 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	0.0557 M	0.0275 M	<0.015 #	<0.015 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	0.0314 M	<0.014 M	<0.014 #	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	0.0381 M	0.0252 M	0.0203 #	<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	0.0357 M	0.0327 M	<0.015 #	<0.015 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	<0.014 M	<0.014 #	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	0.0216 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	<0.018 M	<0.018 #	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 #	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	<0.024 M	<0.024 #	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	0.364	0.182	0.216	<0.118	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R16	40A-R16	40A-R13-V	40A-R16-V	40A-S12	40A-S12
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.20 - 0.20	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750469	17750474	17750597	17750480	17750601	17750606
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.2	102	91.2	99.6	89.3	99.7
Acenaphthene-d10 % recovery**	%	TM218		77.2	93.4	91.2	91.9	91.4	84.3
Phenanthrene-d10 % recovery**	%	TM218		97.1	99.2	99.2	92.2	95.1	80.4
Chrysene-d12 % recovery**	%	TM218		77.4	95.3	105	96.3	80.4	92.5
Perylene-d12 % recovery**	%	TM218		79.6	94.7	91.8	100	76.3	92
Naphthalene	<0.009 mg/kg	TM218		0.0877 M	0.0666 M	<0.009 M	<0.009 M	0.0136 #	0.032 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.06 M	0.0216 M	<0.012 M	<0.012 M	<0.012 #	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0625 M	0.0252 M	<0.008 M	<0.008 M	<0.008 #	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.05 M	0.0134 M	<0.01 M	<0.01 M	<0.01 #	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.858 M	0.394 M	<0.015 M	<0.015 M	0.0582 #	0.0677 M
Anthracene	<0.016 mg/kg	TM218		0.192 M	0.15 M	<0.016 M	<0.016 M	<0.016 #	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		2.13 M	1.2 M	<0.017 M	<0.017 M	0.0366 #	0.0365 M
Pyrene	<0.015 mg/kg	TM218		2.24 M	4.65 M	<0.015 M	<0.015 M	0.0283 #	0.0278 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.758 M	2.11 M	<0.014 M	<0.014 M	0.0211 #	0.0185 M
Chrysene	<0.01 mg/kg	TM218		0.788 M	2 M	<0.01 M	<0.01 M	0.0352 #	0.0279 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.878 M	2.74 M	<0.015 M	<0.015 M	0.0318 #	0.0227 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.342 M	1.04 M	<0.014 M	<0.014 M	<0.014 #	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.506 M	1.39 M	<0.015 M	<0.015 M	<0.015 #	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.45 M	0.794 M	<0.018 M	<0.018 M	<0.018 #	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.115 M	0.222 M	<0.023 M	<0.023 M	<0.023 #	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.419 M	0.988 M	<0.024 M	<0.024 M	<0.024 #	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		9.71	17.8	<0.118	<0.118	0.225	0.233

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-S18	40A-S18	40A-S18	40A-S12-V	40A-S18-V	RLS2-TP11
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	1.80 - 1.80	2.30 - 2.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750485	17750492	17750496	17750610	17750500	17750281
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.2	84.1	100	87.6	105	87.8
Acenaphthene-d10 % recovery**	%	TM218		88.6	88.1	89.3	86.7	90	84.5
Phenanthrene-d10 % recovery**	%	TM218		94.3	91.8	87.4	86.1	83.6	90.8
Chrysene-d12 % recovery**	%	TM218		78.3	73.4	103	79.1	101	88.3
Perylene-d12 % recovery**	%	TM218		79.3	71.1	104	81.9	104	93.4
Naphthalene	<0.009 mg/kg	TM218		0.0397 M	0.119 M	0.0155 M	<0.009 M	<0.009 M	0.181 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	0.0874 M
Acenaphthene	<0.008 mg/kg	TM218		0.0134 M	0.0967 M	<0.008 M	<0.008 M	<0.008 M	0.208 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0963 M	<0.01 M	<0.01 M	<0.01 M	0.255 M
Phenanthrene	<0.015 mg/kg	TM218		0.128 M	0.423 M	0.0458 M	0.0353 M	0.0266 M	2.52 M
Anthracene	<0.016 mg/kg	TM218		0.0202 M	0.0797 M	<0.016 M	<0.016 M	<0.016 M	0.734 M
Fluoranthene	<0.017 mg/kg	TM218		0.146 M	0.255 M	0.0398 M	0.0572 M	0.0595 M	3.77 M
Pyrene	<0.015 mg/kg	TM218		0.131 M	0.18 M	0.0335 M	0.0445 M	0.0502 M	2.92 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0599 M	0.0728 M	0.0261 M	0.0272 M	0.0333 M	2.03 M
Chrysene	<0.01 mg/kg	TM218		0.0856 M	0.0977 M	0.0281 M	0.0363 M	0.0517 M	2.47 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0957 M	0.101 M	0.0377 M	0.0519 M	0.0806 M	3.03 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0303 M	0.0346 M	<0.014 M	<0.014 M	0.0299 M	1.23 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0338 M	0.0452 M	0.0213 M	0.0282 M	0.034 M	1.8 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0394 M	0.0443 M	<0.018 M	<0.018 M	<0.018 M	1.35 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	0.327 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.034 M	0.0418 M	<0.024 M	<0.024 M	0.0459 M	1.31 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.858	1.69	0.248	0.281	0.412	24.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RLS2-TP12	RLS2-TP13	RLS2-TP13	RLS2-TP14	RLS2-TP14	RLS2-TP14
			Depth (m)	0.50 - 0.50	0.20 - 0.20	0.50 - 0.50	0.80 - 0.80	1.50 - 1.50	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750455	17750583	17750622	17750635	17750640	17750294
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97.3	95.5	99.6	97.9	98.2	87.1
Acenaphthene-d10 % recovery**	%	TM218		90.2	92	85.5	90.1	90.2	85.8
Phenanthrene-d10 % recovery**	%	TM218		91.3	93.2	74.6	91.1	94.4	98
Chrysene-d12 % recovery**	%	TM218		85.4	87.3	78.7	107	108	81.3
Perylene-d12 % recovery**	%	TM218		86.5	87.2	84.4	112	113	84.5
Naphthalene	<0.009 mg/kg	TM218		0.0415 M	0.0134 M	0.124 M	0.17 M	0.474 M	0.0983 #
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	0.0159 M	<0.012 #
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	0.155 M	1.17 M	0.0153 #
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.0216 M	0.0749 M	0.555 M	<0.01 #
Phenanthrene	<0.015 mg/kg	TM218		0.104 M	0.0294 M	0.115 M	0.925 M	5.1 M	0.119 #
Anthracene	<0.016 mg/kg	TM218		0.0237 M	<0.016 M	<0.016 M	0.22 M	1.44 M	0.0234 #
Fluoranthene	<0.017 mg/kg	TM218		0.145 M	0.0237 M	0.0514 M	2 M	9.37 M	0.155 #
Pyrene	<0.015 mg/kg	TM218		0.112 M	0.0213 M	0.0393 M	2.13 M	9.79 M	0.148 #
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0885 M	<0.014 M	0.0207 M	1.45 M	5.96 M	0.0684 #
Chrysene	<0.01 mg/kg	TM218		0.0925 M	0.0164 M	0.0386 M	1.5 M	5.02 M	0.0691 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.134 M	0.0188 M	0.039 M	2.03 M	7.54 M	0.114 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0461 M	<0.014 M	<0.014 M	0.866 M	3.9 M	0.0407 #
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0879 M	<0.015 M	<0.015 M	2.07 M	7.86 M	0.0771 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0652 M	<0.018 M	<0.018 M	1.5 M	5.23 M	0.0549 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	0.318 M	1.12 M	<0.023 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0695 M	<0.024 M	<0.024 M	1.83 M	5.72 M	0.0648 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.01	0.123	0.45	17.2	70.3	1.05

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RLS2-TP15	RLS2-TP15	RLS2-TP15	RLS2-TP11-V	RLS2-TP12-V	RLS2-TP13-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.80 - 0.80	0.70 - 0.70	0.65 - 0.65
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750306	17750313	17750319	17750370	17750522	17750631
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		102	86.3	86.2	85.9	96.6	96.6
Acenaphthene-d10 % recovery**	%	TM218		84.7	78.1	74.5	90.5	93.2	91.9
Phenanthrene-d10 % recovery**	%	TM218		84.7	94.9	93.6	101	95	95
Chrysene-d12 % recovery**	%	TM218		99.4	75.5	81.6	97.9	89	89.7
Perylene-d12 % recovery**	%	TM218		102	73.6	82.9	98.9	88.9	87.2
Naphthalene	<0.009 mg/kg	TM218		0.0723 M	0.0683 M	0.0348 M	<0.009 M	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.024 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0404 M	0.0332 M	0.0578 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.02 M	0.0169 M	0.0171 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.749 M	0.299 M	0.398 M	<0.015 M	<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.16 M	0.0646 M	0.0975 M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		1.36 M	0.502 M	1.03 M	<0.017 M	<0.017 M	0.0304 M
Pyrene	<0.015 mg/kg	TM218		1.24 M	0.469 M	1.07 M	<0.015 M	<0.015 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.812 M	0.222 M	0.528 M	<0.014 M	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.817 M	0.234 M	0.554 M	<0.01 M	<0.01 M	0.0207 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.05 M	0.37 M	0.876 M	<0.015 M	<0.015 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.339 M	0.134 M	0.306 M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.63 M	0.211 M	0.617 M	<0.015 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.372 M	0.19 M	0.491 M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0997 M	0.0464 M	0.0983 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.481 M	0.193 M	0.508 M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		8.22	3.05	6.68	<0.118	<0.118	<0.118

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RLS2-TP14-V	RLS2-TP15-V				
			Depth (m)	2.25 - 2.25	2.30 - 2.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	14/06/2018	14/06/2018				
			Sample Time	00:00	00:00				
			Date Received	15/06/2018	15/06/2018				
			SDG Ref	180615-113	180615-113				
			Lab Sample No.(s)	17750300	17750328				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		96.6	89.8				
Acenaphthene-d10 % recovery**	%	TM218		89.6	89.3				
Phenanthrene-d10 % recovery**	%	TM218		92.5	88.1				
Chrysene-d12 % recovery**	%	TM218		103	79.8				
Perylene-d12 % recovery**	%	TM218		98.4	83.3				
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M				
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M				
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M				
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M				
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M				
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	0.0324 M				
Pyrene	<0.015 mg/kg	TM218		<0.015 M	0.0275 M				
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M				
Chrysene	<0.01 mg/kg	TM218		<0.01 M	0.0203 M				
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	0.0351 M				
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M				
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M				
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M				
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.104 M				
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	0.219				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N13	40A-N13	40A-N13-V	40A-N20-V	40A-O14	40A-O16
			Depth (m)	0.50 - 0.50	1.10 - 1.10	1.00 - 1.00	0.80 - 0.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750562	17750558	17750574	17750542	17750549	17750391
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		99	80	107	97	79	119
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	32.1	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	0.0472	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	0.0779	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	1.43	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	17.8	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		8.28	0.847	997	<0.1	1.03	6.54
Aliphatics >C16-C21	<0.1 mg/kg	TM173		24	1.22	709	<0.1	4.82	22.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		31.9	2.02	176	7.22	85.7	115
Aliphatics >C35-C44	<0.1 mg/kg	TM173		3.38	<0.1	13.2	<0.1	18.4	70.3
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		67.6	4.08	1890	7.22	110	214
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	0.953	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	11.8	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		5.17	<0.1	188	<0.1	1.49	2.18
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		13.2	0.203	295	<0.1	4.28	11.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		18.2	12.8	82	13	40.3	72.9
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		4.16	2.02	15.8	1.44	15.2	87.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		1.14	<0.1	6.58	<0.1	5.04	42.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		40.8	15	581	14.5	61.2	174
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		108	19.1	2510	21.7	171	388

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O16	40A-O16	40A-O16	40A-O17	40A-O17	40A-O17
			Depth (m)	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750397	17750403	17750411	17750336	17750343	17750355
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		92	75	89	85	97	83
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		0.43	<0.176	2.5	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0415	<0.04	0.061	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0501	<0.04	1.14	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.166	<0.04	0.306	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.79	7.62	5.97	4.1	5.36	5.04
Aliphatics >C16-C21	<0.1 mg/kg	TM173		8.96	32.6	24.8	19	19.7	23.8
Aliphatics >C21-C35	<0.1 mg/kg	TM173		52.7	171	149	126	93.4	238
Aliphatics >C35-C44	<0.1 mg/kg	TM173		14.4	54.4	45.6	45.5	26.7	207
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		77.9	266	225	195	145	473
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	0.764	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.111	<0.04	0.203	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.19	4	3.18	1.71	<0.1	2.3
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		4.98	17.3	14.4	11.7	<0.1	14.5
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		34.7	86.1	92.1	66.8	18.7	162
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		15.5	39	37.9	39.2	10	156
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		6.15	15.9	15.6	16	2.72	67.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		56.4	146	148	119	28.7	335
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		135	412	375	314	174	808

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O17	40A-O14-V	40A-O16-V	40A-O17-V	40A-P13	40A-P13
			Depth (m)	3.00 - 3.00	0.70 - 0.70	3.60 - 3.60	4.00 - 4.00	0.40 - 0.40	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750363	17750554	17750425	17750384	17750579	17750588
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		87	98	104	69	107	119
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	0.358
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0547
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0699	0.137
Aliphatics >C12-C16	<0.1 mg/kg	TM173		4.02	0.718	<0.1	<0.1	5.19	1.08
Aliphatics >C16-C21	<0.1 mg/kg	TM173		16.7	0.712	<0.1	<0.1	14.2	2.52
Aliphatics >C21-C35	<0.1 mg/kg	TM173		93.5	5.04	<0.1	78.1	66.6	12.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		31.8	<0.1	<0.1	<0.1	22.1	3.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		146	6.47	<0.1	78.1	108	19.8
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0466	0.0905
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.31	0.267	<0.1	<0.1	1.02	1.8
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		7.14	0.663	<0.1	4.12	4.24	2.69
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		48.7	19	11.6	344	21.6	10.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		25	3.47	<0.1	28.2	14.4	4.28
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		9.93	<0.1	<0.1	9.41	6.2	1.5
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		82.2	23.3	11.6	376	41.2	19.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		228	29.8	11.6	454	149	39.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P13	40A-P15	40A-P15	40A-P15	40A-P15	40A-P13-V
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750614	17750429	17750436	17750440	17750445	17750592
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		82	102	90	86	60	69
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	0.277	0.243	0.881	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0479	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.106	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0757	<0.04	0.0941	0.0888	0.384	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.41	6.03	6.68	8.37	10.8	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		2.73	35.3	28.9	66.8	107	2.56
Aliphatics >C21-C35	<0.1 mg/kg	TM173		8.91	106	86.1	1820	3220	133
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.19	20.1	12.7	632	841	3.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		14.2	167	134	2530	4180	139
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0718	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0509	<0.04	0.0627	0.0599	0.256	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.54	1.15	2.96	6.42	9.3	2.71
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.11	9.27	14.1	22.2	32.1	6.96
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		5.05	39.6	54	412	732	304
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.21	13.7	19.4	383	239	25.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		0.17	4.91	7.29	173	65.8	7.36
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		11.9	63.6	90.5	823	1010	339
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		26.3	231	225	3350	5190	478

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P15-V	40A-Q18	40A-Q20	40A-Q20	40A-Q18-V	40A-Q20-V
			Depth (m)	4.20 - 4.20	0.20 - 0.20	0.80 - 0.80	1.50 - 1.50	0.30 - 0.30	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750462	17750504	17750528	17750532	17750514	17750538
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		66	96	84	91	114	66
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	0.425
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.103
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0814
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0902
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	6.19	0.863	<0.1	<0.1	0.873
Aliphatics >C16-C21	<0.1 mg/kg	TM173		5.8	23.6	3.58	1.44	<0.1	2.09
Aliphatics >C21-C35	<0.1 mg/kg	TM173		201	60.9	20.3	1.53	<0.1	53
Aliphatics >C35-C44	<0.1 mg/kg	TM173		46.9	9.35	3.25	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		254	100	28	2.96	<0.1	55.9
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.055
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0594
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.77	1.34	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		10.4	7.06	3.11	0.7	<0.1	7.02
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		253	21.4	21.4	<0.1	<0.1	178
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		59.7	5.15	3.61	<0.1	<0.1	19.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		23	1.69	<0.1	<0.1	<0.1	3.82
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		323	35.3	29.5	0.7	<0.1	205
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		577	135	57.5	3.66	<0.1	261

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R16	40A-R16	40A-R13-V	40A-R16-V	40A-S12	40A-S12
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.20 - 0.20	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750469	17750474	17750597	17750480	17750601	17750606
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		98	68	101	65	109	104
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0564	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		4.19	6	0.267	0.296	3.71	1.93
Aliphatics >C16-C21	<0.1 mg/kg	TM173		17.2	22.7	0.355	0.572	6.53	2.42
Aliphatics >C21-C35	<0.1 mg/kg	TM173		153	132	1.36	8.84	15.5	3.75
Aliphatics >C35-C44	<0.1 mg/kg	TM173		40.7	41.1	<0.1	5.83	4.89	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		215	202	1.99	15.5	30.6	8.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.03	2.68	<0.1	0.188	1.77	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		13.5	19.6	<0.1	4.58	4.65	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		76.9	107	2.93	127	13.6	<0.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		38.4	52.3	0.677	56.2	3.47	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		15.4	20.2	<0.1	28.5	1.18	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		131	182	3.6	188	23.4	<0.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		346	384	5.59	203	54.1	8.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-S18	40A-S18	40A-S18	40A-S12-V	40A-S18-V	RLS2-TP11
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	1.80 - 1.80	2.30 - 2.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750485	17750492	17750496	17750610	17750500	17750281
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97	94	92	77	89	76
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		0.222	0.355	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	0.0622	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0754	0.106	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.44	14.1	0.573	<0.1	3.76	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		11.3	22.6	1.63	<0.1	0.559	1.92
Aliphatics >C21-C35	<0.1 mg/kg	TM173		62.8	43.5	17.4	2.99	8.63	29.4
Aliphatics >C35-C44	<0.1 mg/kg	TM173		27.9	11.3	3.57	<0.1	<0.1	7.75
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		108	91.5	23.2	2.99	12.9	39
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.0531	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.051	0.0712	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.55	4.99	<0.1	<0.1	1.43	2.23
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		6.73	10.4	0.466	1.22	1.95	14.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		42.3	26.3	8.56	25.7	43	79
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		28.1	12.3	3.87	2.68	7.39	31.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		11.3	4.69	1.31	<0.1	2.29	12.2
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		79.7	53.9	12.9	29.6	53.8	128
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		188	146	36.1	32.6	66.7	167

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RLS2-TP12	RLS2-TP13	RLS2-TP13	RLS2-TP14	RLS2-TP14	RLS2-TP14
			Depth (m)	0.50 - 0.50	0.20 - 0.20	0.50 - 0.50	0.80 - 0.80	1.50 - 1.50	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750455	17750583	17750622	17750635	17750640	17750294
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		95	104	73	122	85	70
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	1.2
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0408
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0864
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.158
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.456
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	1.18	3.15	3.48	23.9
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1	3.45	13.5	20	34.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		13.9	9.73	8.65	96.6	124	36.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		5.87	2.01	1.88	27.8	28.5	5.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		19.7	11.7	15.2	141	176	100
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.142
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.304
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	0.47	2.15	3.64	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		2.04	<0.1	0.841	11.9	26.4	3.05
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		20.4	5.83	5.86	79.3	122	1.18
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		11.9	1.24	1.8	39.3	33.7	0.217
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		5.16	<0.1	<0.1	14.3	11.9	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		34.4	7.07	8.97	133	186	4.45
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		54.1	18.8	24.1	274	362	106

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RLS2-TP15	RLS2-TP15	RLS2-TP15	RLS2-TP11-V	RLS2-TP12-V	RLS2-TP13-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.80 - 0.80	0.70 - 0.70	0.65 - 0.65
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750306	17750313	17750319	17750370	17750522	17750631
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		86	82	88	96	87	130
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.22	4.39	4.89	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		18.5	16.4	22.6	<0.1	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		120	71.9	84.9	1.98	15.5	3.88
Aliphatics >C35-C44	<0.1 mg/kg	TM173		23.9	12.9	18.9	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		166	106	131	1.98	15.5	3.88
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.5	1.43	1.62	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		8.77	6.73	9.96	<0.1	2.17	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		51.9	28.9	42.7	7.54	111	21.6
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		21.9	8.17	16.7	0.891	6.33	2.31
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		8.29	2.66	6.43	<0.1	<0.1	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		84.1	45.2	71	8.44	120	23.9
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		250	151	202	10.4	135	27.8

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RLS2-TP14-V	RLS2-TP15-V				
			Depth (m)	2.25 - 2.25	2.30 - 2.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	14/06/2018	14/06/2018				
			Sample Time	00:00	00:00				
			Date Received	15/06/2018	15/06/2018				
			SDG Ref	180615-113	180615-113				
			Lab Sample No.(s)	17750300	17750328				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		70	96				
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176				
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04				
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04				
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04				
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04				
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.46	0.102				
Aliphatics >C16-C21	<0.1 mg/kg	TM173		7.54	2.51				
Aliphatics >C21-C35	<0.1 mg/kg	TM173		37.9	5.23				
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.37	<0.1				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		50.2	7.85				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.23	<0.1				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		5.97	0.589				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		159	17.8				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		27.1	1.88				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		9.72	<0.1				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		194	20.2				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		244	28.1				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-N13	40A-N13	40A-N13-V	40A-N20-V	40A-O14	40A-O16
			Depth (m)	0.50 - 0.50	1.10 - 1.10	1.00 - 1.00	0.80 - 0.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750562	17750558	17750574	17750542	17750549	17750391
			AGS Reference						
Dibromofluoromethane**	%	TM116		113	121	112	109	111	101
Toluene-d8**	%	TM116		99.7	99.7	95.9	98.8	96.9	97.4
4-Bromofluorobenzene**	%	TM116		94.6	95.6	81	99.7	87.5	97.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 #	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 #	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 #	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 #	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O16	40A-O16	40A-O16	40A-O17	40A-O17	40A-O17
			Depth (m)	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750397	17750403	17750411	17750336	17750343	17750355
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	105	107	105	104	106
Toluene-d8**	%	TM116		94.7	98.6	93.6	99.9	96.2	95.5
4-Bromofluorobenzene**	%	TM116		93	97	97.7	96.2	95.3	92
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-O17	40A-O14-V	40A-O16-V	40A-O17-V	40A-P13	40A-P13
			Depth (m)	3.00 - 3.00	0.70 - 0.70	3.60 - 3.60	4.00 - 4.00	0.40 - 0.40	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750363	17750554	17750425	17750384	17750579	17750588
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	112	103	108	116	117
Toluene-d8**	%	TM116		95	98.6	96.1	88.1	99.8	99.8
4-Bromofluorobenzene**	%	TM116		93.2	92	96.6	80.5	93.7	96.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P13	40A-P15	40A-P15	40A-P15	40A-P15	40A-P13-V
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750614	17750429	17750436	17750440	17750445	17750592
			AGS Reference						
Dibromofluoromethane**	%	TM116		111	106	118	111	114	110
Toluene-d8**	%	TM116		99.1	98.6	97.7	95.3	88.9	88.7
4-Bromofluorobenzene**	%	TM116		92.9	93.9	94.8	88.2	74	75.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P15-V	40A-Q18	40A-Q20	40A-Q20	40A-Q18-V	40A-Q20-V
			Depth (m)	4.20 - 4.20	0.20 - 0.20	0.80 - 0.80	1.50 - 1.50	0.30 - 0.30	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750462	17750504	17750528	17750532	17750514	17750538
			AGS Reference						
Dibromofluoromethane**	%	TM116		115	112	124	108	118	107
Toluene-d8**	%	TM116		94.3	96.8	96.3	99.5	100	95.4
4-Bromofluorobenzene**	%	TM116		83.8	92.9	93.5	92.9	97	81.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 #	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 #	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 #	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 #	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R16	40A-R16	40A-R13-V	40A-R16-V	40A-S12	40A-S12
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.20 - 0.20	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750469	17750474	17750597	17750480	17750601	17750606
			AGS Reference						
Dibromofluoromethane**	%	TM116		116	113	108	103	123	109
Toluene-d8**	%	TM116		98.9	97.4	99.6	89.9	96.9	99.8
4-Bromofluorobenzene**	%	TM116		95.1	92.5	98.7	70.1	90.5	94.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 #	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 #	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 #	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 #	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-S18	40A-S18	40A-S18	40A-S12-V	40A-S18-V	RLS2-TP11
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	1.80 - 1.80	2.30 - 2.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750485	17750492	17750496	17750610	17750500	17750281
			AGS Reference						
Dibromofluoromethane**	%	TM116		115	104	114	110	111	102
Toluene-d8**	%	TM116		96.3	94.4	100	92.1	98.7	101
4-Bromofluorobenzene**	%	TM116		91.5	77.9	95.2	93.8	95.7	90.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RLS2-TP12	RLS2-TP13	RLS2-TP13	RLS2-TP14	RLS2-TP14	RLS2-TP14
			Depth (m)	0.50 - 0.50	0.20 - 0.20	0.50 - 0.50	0.80 - 0.80	1.50 - 1.50	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750455	17750583	17750622	17750635	17750640	17750294
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	102	107	105	105	103
Toluene-d8**	%	TM116		95.7	98.8	97.8	95.9	95.5	101
4-Bromofluorobenzene**	%	TM116		97.2	99	91.8	96.4	92.5	94.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 #
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 #
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 #
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 #
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RLS2-TP15	RLS2-TP15	RLS2-TP15	RLS2-TP11-V	RLS2-TP12-V	RLS2-TP13-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.80 - 0.80	0.70 - 0.70	0.65 - 0.65
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018	14/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018	15/06/2018
			SDG Ref	180615-113	180615-113	180615-113	180615-113	180615-113	180615-113
			Lab Sample No.(s)	17750306	17750313	17750319	17750370	17750522	17750631
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	103	104	107	104	103
Toluene-d8**	%	TM116		95.9	95	99.9	99.5	93.2	95.8
4-Bromofluorobenzene**	%	TM116		89.7	92.4	95	98.4	87.4	95.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	RLS2-TP14-V	RLS2-TP15-V				
			Depth (m)	2.25 - 2.25	2.30 - 2.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	14/06/2018	14/06/2018				
			Sample Time	00:00	00:00				
			Date Received	15/06/2018	15/06/2018				
			SDG Ref	180615-113	180615-113				
			Lab Sample No.(s)	17750300	17750328				
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	104				
Toluene-d8**	%	TM116		92.1	95.6				
4-Bromofluorobenzene**	%	TM116		88.8	97.2				
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M				
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M				
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M				
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #				
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M				
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4				

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-N13 0.50 - 0.50 SOLID 14/06/2018 00:00:00 16/06/2018 07:55:42 180615-113 17750562 TM048	21/06/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-O14 0.50 - 0.50 SOLID 14/06/2018 00:00:00 16/06/2018 08:04:31 180615-113 17750549 TM048	20/06/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-O16 0.50 - 0.50 SOLID 14/06/2018 00:00:00 15/06/2018 17:07:26 180615-113 17750391 TM048	21/06/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-O16 3.00 - 3.00 SOLID 14/06/2018 00:00:00 16/06/2018 10:01:35 180615-113 17750411 TM048	21/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-O17 0.50 - 0.50 SOLID 14/06/2018 00:00:00 15/06/2018 17:10:24 180615-113 17750336 TM048	21/06/2018	Lucy Caroe	Soil containing material typical of asbestos cement	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-O17 2.00 - 2.00 SOLID 14/06/2018 00:00:00 15/06/2018 17:55:20 180615-113 17750355 TM048	21/06/2018	Lucy Caroe	Soil containing material typical of AIB	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180615-113 **Client Reference:** **Report Number:** 461760
Location: Llanwern **Order Number:** LLA448 **Superseded Report:** 461458

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-P13 1.00 - 1.00 SOLID 14/06/2018 00:00:00 16/06/2018 08:22:44 180615-113 17750588 TM048	21/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-P13 1.50 - 1.50 SOLID 14/06/2018 00:00:00 16/06/2018 08:27:25 180615-113 17750614 TM048	21/06/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-P15 1.00 - 1.00 SOLID 14/06/2018 00:00:00 16/06/2018 12:01:17 180615-113 17750436 TM048	20/06/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-P15 2.00 - 2.00 SOLID 14/06/2018 00:00:00 16/06/2018 07:55:05 180615-113 17750440 TM048	21/06/2018	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-Q18 0.20 - 0.20 SOLID 14/06/2018 00:00:00 16/06/2018 07:42:37 180615-113 17750504 TM048	21/06/2018	James Richards	Soil containing material typical of asbestos cement debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-Q20 0.80 - 0.80 SOLID 14/06/2018 00:00:00 16/06/2018 07:36:10 180615-113 17750528 TM048	21/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180615-113 **Client Reference:** **Report Number:** 461760
Location: Llanwern **Order Number:** LLA448 **Superseded Report:** 461458

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-R16 0.50 - 0.50 SOLID 14/06/2018 00:00:00 16/06/2018 11:58:42 180615-113 17750469 TM048	20/06/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-S12 0.50 - 0.50 SOLID 14/06/2018 00:00:00 16/06/2018 08:24:46 180615-113 17750601 TM048	21/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-S18 0.50 - 0.50 SOLID 14/06/2018 00:00:00 15/06/2018 17:14:16 180615-113 17750485 TM048	21/06/2018	Andrzej Ferfecki	loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-S18 2.00 - 2.00 SOLID 14/06/2018 00:00:00 16/06/2018 08:01:34 180615-113 17750496 TM048	21/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	RLS2-TP11 0.50 - 0.50 SOLID 14/06/2018 00:00:00 15/06/2018 18:55:46 180615-113 17750281 TM048	21/06/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	RLS2-TP12 0.50 - 0.50 SOLID 14/06/2018 00:00:00 15/06/2018 17:55:21 180615-113 17750455 TM048	21/06/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180615-113 **Client Reference:** **Report Number:** 461760
Location: Llanwern **Order Number:** LLA448 **Superseded Report:** 461458

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	RLS2-TP13 0.50 - 0.50 SOLID 14/06/2018 00:00:00 15/06/2018 18:58:12 180615-113 17750622 TM048	21/06/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	RLS2-TP14 0.80 - 0.80 SOLID 14/06/2018 00:00:00 16/06/2018 07:42:20 180615-113 17750635 TM048	21/06/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	RLS2-TP14 2.00 - 2.00 SOLID 14/06/2018 00:00:00 15/06/2018 19:08:38 180615-113 17750294 TM048	21/06/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	RLS2-TP15 0.50 - 0.50 SOLID 14/06/2018 00:00:00 15/06/2018 19:15:28 180615-113 17750306 TM048	21/06/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	RLS2-TP15 1.50 - 1.50 SOLID 14/06/2018 00:00:00 15/06/2018 19:12:52 180615-113 17750319 TM048	21/06/2018	Barbara Urbanek-Walsh	Fibre bundles in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-O16 0.50 - 0.50 SOLID 14/06/2018 00:00:00 15/06/2018 17:08:16 180615-113 17750391 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-O17 0.50 - 0.50 SOLID 14/06/2018 00:00:00 15/06/2018 17:10:57 180615-113 17750336 TM304	None (#)	N/A	0.0023 (#)	<0.001 (#)	0.0023 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-O17 2.00 - 2.00 SOLID 14/06/2018 00:00:00 15/06/2018 17:54:58 180615-113 17750355 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-P15 1.00 - 1.00 SOLID 14/06/2018 00:00:00 16/06/2018 12:02:22 180615-113 17750436 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-P15 2.00 - 2.00 SOLID 14/06/2018 00:00:00 16/06/2018 07:57:46 180615-113 17750440 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-Q18 0.20 - 0.20 SOLID 14/06/2018 00:00:00 16/06/2018 07:42:12 180615-113 17750504 TM304	None (#)	N/A	0.0015 (#)	<0.001 (#)	0.0015 (#)

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-S18 0.50 - 0.50 SOLID 14/06/2018 00:00:00 15/06/2018 17:15:36 180615-113 17750485 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	RLS2-TP11 0.50 - 0.50 SOLID 14/06/2018 00:00:00 15/06/2018 18:56:32 180615-113 17750281 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	RLS2-TP14 2.00 - 2.00 SOLID 14/06/2018 00:00:00 15/06/2018 19:08:04 180615-113 17750294 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	RLS2-TP15 1.50 - 1.50 SOLID 14/06/2018 00:00:00 15/06/2018 19:11:58 180615-113 17750319 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750281
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP11
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.000133	<0.00001	0.00133	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0256	<0.0005	0.256	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0176	<0.0003	0.176	<0.003	-	-	-
Lead	0.00259	<0.0002	0.0259	<0.002	-	-	-
Manganese	0.00392	<0.003	0.0392	<0.03	-	-	-
Nickel	0.000927	<0.0004	0.00927	<0.004	-	-	-
Selenium	0.00117	<0.001	0.0117	<0.01	-	-	-
Vanadium	0.0139	<0.001	0.139	<0.01	-	-	-
Zinc	0.00305	<0.001	0.0305	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.103	<0.019	1.03	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000128	<0.00001	0.000128	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000572	<0.000005	0.0000572	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000038	<0.000005	0.00038	<0.00005	-	-	-
Anthracene by GCMS	0.0000081	<0.000005	0.000081	<0.00005	-	-	-
Phenanthrene by GCMS	0.000028	<0.000005	0.00028	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Pyrene by GCMS	0.0000329	<0.000005	0.000329	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000408	<0.000005	0.000408	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000157	<0.000005	0.000157	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000019	<0.000002	0.00019	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000705	<0.000005	0.0000705	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000391	<0.000005	0.000391	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000233	<0.000005	0.000233	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000296	<0.000082	0.00296	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.84
Conductivity (µS/cm)	126.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750281
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP11
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.84
Conductivity (µS/cm)	126.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750294
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP14
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	5.36	<0.2	53.6	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0152	<0.0005	0.152	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000398	<0.0002	0.00398	<0.002	-	-	-
Manganese	0.0149	<0.003	0.149	<0.03	-	-	-
Nickel	0.00309	<0.0004	0.0309	<0.004	-	-	-
Selenium	0.00239	<0.001	0.0239	<0.01	-	-	-
Vanadium	0.0315	<0.001	0.315	<0.01	-	-	-
Zinc	0.0041	<0.001	0.041	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.31	<0.019	3.1	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000711	<0.00001	0.000711	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000219	<0.000005	0.000219	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000214	<0.000005	0.000214	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000347	<0.000005	0.000347	<0.00005	-	-	-
Fluorene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000187	<0.000005	0.000187	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000182	<0.000082	0.00182	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	9.04
Conductivity (µS/cm)	244.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750294
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP14
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.017	<0.01	0.17	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	9.04
Conductivity (µS/cm)	244.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750306
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP15
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000985	<0.00001	0.000985	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0055	<0.0055	<0.055	<0.055	-	-	-
Cadmium	<0.00088	<0.00088	<0.0088	<0.0088	-	-	-
Chromium	<0.011	<0.011	<0.11	<0.11	-	-	-
Copper	0.000306	<0.0003	0.00306	<0.003	-	-	-
Lead	<0.0022	<0.0022	<0.022	<0.022	-	-	-
Manganese	<0.033	<0.033	<0.33	<0.33	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.011	<0.011	<0.11	<0.11	-	-	-
Vanadium	0.0893	<0.011	0.893	<0.11	-	-	-
Zinc	<0.011	<0.011	<0.11	<0.11	-	-	-
Iron (Dis.Filt) mg/l	<0.209	<0.209	<2.09	<2.09	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000437	<0.00001	0.000437	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000486	<0.000005	0.000486	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000941	<0.000005	0.000941	<0.00005	-	-	-
Anthracene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Phenanthrene by GCMS	0.000123	<0.000005	0.00123	<0.00005	-	-	-
Fluorene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Chrysene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Pyrene by GCMS	0.0000968	<0.000005	0.000968	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000075	<0.000005	0.000075	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000215	<0.000005	0.000215	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000845	<0.000005	0.0000845	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000118	<0.000002	0.000118	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000994	<0.000005	0.0000994	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000515	<0.000082	0.00515	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.42
Conductivity (µS/cm)	259.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750306
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP15
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.01	<0.01	0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.42
Conductivity (µS/cm)	259.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750313
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP15
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000308	<0.00001	0.000308	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00231	<0.0005	0.0231	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00187	<0.001	0.0187	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.00345	<0.0002	0.0345	<0.002	-	-	-
Manganese	0.0187	<0.003	0.187	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00291	<0.001	0.0291	<0.01	-	-	-
Vanadium	0.0626	<0.001	0.626	<0.01	-	-	-
Zinc	0.0117	<0.001	0.117	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.163	<0.019	1.63	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000265	<0.00001	0.000265	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000193	<0.000005	0.000193	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000415	<0.000005	0.000415	<0.00005	-	-	-
Anthracene by GCMS	0.00000643	<0.000005	0.0000643	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000357	<0.000005	0.000357	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000404	<0.000005	0.000404	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00017	<0.000082	0.0017	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	330.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750313
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP15
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.017	<0.01	0.17	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	330.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750319
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP15
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000175	<0.00001	0.000175	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000507	<0.0005	0.00507	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00235	<0.001	0.0235	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000498	<0.0002	0.00498	<0.002	-	-	-
Manganese	0.00324	<0.003	0.0324	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.018	<0.001	0.18	<0.01	-	-	-
Zinc	0.00375	<0.001	0.0375	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.269	<0.019	2.69	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000945	<0.00001	0.000945	<0.0001	-	-	-
Acenaphthene by GCMS	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00035	<0.000005	0.0035	<0.00005	-	-	-
Anthracene by GCMS	0.0000624	<0.000005	0.000624	<0.00005	-	-	-
Phenanthrene by GCMS	0.000428	<0.000005	0.00428	<0.00005	-	-	-
Fluorene by GCMS	0.000035	<0.000005	0.00035	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0003	<0.000005	0.003	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00141	<0.000082	0.0141	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.54
Conductivity (µS/cm)	801.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750319
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP15
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.54
Conductivity (µS/cm)	801.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750336
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O17
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000258	<0.00001	0.000258	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00292	<0.0005	0.0292	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00226	<0.001	0.0226	<0.01	-	-	-
Copper	0.00169	<0.0003	0.0169	<0.003	-	-	-
Lead	0.000378	<0.0002	0.00378	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0017	<0.001	0.017	<0.01	-	-	-
Vanadium	0.0599	<0.001	0.599	<0.01	-	-	-
Zinc	0.00629	<0.001	0.0629	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000103	<0.00001	0.00103	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000156	<0.000005	0.000156	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000073	<0.000005	0.000073	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000523	<0.000005	0.000523	<0.00005	-	-	-
Anthracene by GCMS	0.00000891	<0.000005	0.0000891	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000359	<0.000005	0.000359	<0.00005	-	-	-
Fluorene by GCMS	0.00000589	<0.000005	0.0000589	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000728	<0.000005	0.000728	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000301	<0.000082	0.00301	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.99
Conductivity (µS/cm)	386.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750336
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O17
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.99
Conductivity (µS/cm)	386.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750343
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O17
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000145	<0.00001	0.000145	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00136	<0.0005	0.0136	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0038	<0.001	0.038	<0.01	-	-	-
Copper	0.00288	<0.0003	0.0288	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000553	<0.0004	0.00553	<0.004	-	-	-
Selenium	0.00185	<0.001	0.0185	<0.01	-	-	-
Vanadium	0.0407	<0.001	0.407	<0.01	-	-	-
Zinc	0.00315	<0.001	0.0315	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000233	<0.00001	0.000233	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000972	<0.000005	0.0000972	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000468	<0.000005	0.000468	<0.00005	-	-	-
Anthracene by GCMS	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000271	<0.000005	0.000271	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000467	<0.000005	0.000467	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000164	<0.000082	0.00164	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.02
Conductivity (µS/cm)	356.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750343
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O17
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.02
Conductivity (µS/cm)	356.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750355
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O17
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00211	<0.0005	0.0211	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00773	<0.001	0.0773	<0.01	-	-	-
Copper	0.00413	<0.0003	0.0413	<0.003	-	-	-
Lead	0.0021	<0.0002	0.021	<0.002	-	-	-
Manganese	0.00914	<0.003	0.0914	<0.03	-	-	-
Nickel	0.00137	<0.0004	0.0137	<0.004	-	-	-
Selenium	0.00303	<0.001	0.0303	<0.01	-	-	-
Vanadium	0.0733	<0.001	0.733	<0.01	-	-	-
Zinc	0.00652	<0.001	0.0652	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.732	<0.019	7.32	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000118	<0.00001	0.00118	<0.0001	-	-	-
Acenaphthene by GCMS	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000194	<0.000005	0.00194	<0.00005	-	-	-
Anthracene by GCMS	0.0000344	<0.000005	0.000344	<0.00005	-	-	-
Phenanthrene by GCMS	0.000297	<0.000005	0.00297	<0.00005	-	-	-
Fluorene by GCMS	0.0000401	<0.000005	0.000401	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00021	<0.000005	0.0021	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000853	<0.000005	0.0000853	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000479	<0.000002	0.0000479	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00103	<0.000082	0.0103	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.17
Conductivity (µS/cm)	481.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750355
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O17
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.17
Conductivity (µS/cm)	481.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.6
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750363
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O17
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00137	<0.0005	0.0137	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00166	<0.001	0.0166	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000434	<0.0002	0.00434	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00445	<0.001	0.0445	<0.01	-	-	-
Vanadium	0.0719	<0.001	0.719	<0.01	-	-	-
Zinc	0.00417	<0.001	0.0417	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000136	<0.00001	0.00136	<0.0001	-	-	-
Acenaphthene by GCMS	0.000232	<0.000005	0.00232	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000519	<0.000005	0.0000519	<0.00005	-	-	-
Fluoranthene by GCMS	0.000194	<0.000005	0.00194	<0.00005	-	-	-
Anthracene by GCMS	0.0000817	<0.000005	0.000817	<0.00005	-	-	-
Phenanthrene by GCMS	0.000529	<0.000005	0.00529	<0.00005	-	-	-
Fluorene by GCMS	0.0000609	<0.000005	0.000609	<0.00005	-	-	-
Chrysene by GCMS	0.00000822	<0.000005	0.0000822	<0.00005	-	-	-
Pyrene by GCMS	0.000169	<0.000005	0.00169	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00143	<0.000082	0.0143	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.18
Conductivity (µS/cm)	489.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.6
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750363
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O17
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.18
Conductivity (µS/cm)	489.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750391
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O16
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000153	<0.00001	0.000153	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00379	<0.0005	0.0379	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00213	<0.001	0.0213	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000292	<0.0002	0.00292	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00168	<0.001	0.0168	<0.01	-	-	-
Vanadium	0.0619	<0.001	0.619	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000198	<0.00001	0.000198	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000603	<0.000005	0.0000603	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000219	<0.000005	0.000219	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000278	<0.000005	0.000278	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.84
Conductivity (µS/cm)	294.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750391
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O16
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.84
Conductivity (µS/cm)	294.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750397
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O16
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000143	<0.00001	0.000143	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0055	<0.0055	<0.055	<0.055	-	-	-
Cadmium	<0.00088	<0.00088	<0.0088	<0.0088	-	-	-
Chromium	<0.011	<0.011	<0.11	<0.11	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0022	<0.0022	<0.022	<0.022	-	-	-
Manganese	<0.033	<0.033	<0.33	<0.33	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.011	<0.011	<0.11	<0.11	-	-	-
Vanadium	0.0429	<0.011	0.429	<0.11	-	-	-
Zinc	0.0447	<0.011	0.447	<0.11	-	-	-
Iron (Dis.Filt) mg/l	<0.209	<0.209	<2.09	<2.09	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000239	<0.00001	0.000239	<0.0001	-	-	-
Acenaphthene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000268	<0.000005	0.000268	<0.00005	-	-	-
Anthracene by GCMS	0.00000842	<0.000005	0.0000842	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000271	<0.000005	0.000271	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000365	<0.000005	0.000365	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000136	<0.000082	0.00136	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.08
Conductivity (µS/cm)	398.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750397
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O16
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.08
Conductivity (µS/cm)	398.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750403
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O16
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.47	<0.2	14.7	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000127	<0.00001	0.000127	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00715	<0.0005	0.0715	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00283	<0.001	0.0283	<0.01	-	-	-
Copper	0.0191	<0.0003	0.191	<0.003	-	-	-
Lead	0.000344	<0.0002	0.00344	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00376	<0.0004	0.0376	<0.004	-	-	-
Selenium	0.00817	<0.001	0.0817	<0.01	-	-	-
Vanadium	0.233	<0.001	2.33	<0.01	-	-	-
Zinc	0.00323	<0.001	0.0323	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000855	<0.00001	0.000855	<0.0001	-	-	-
Acenaphthene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Anthracene by GCMS	0.0000358	<0.000005	0.000358	<0.00005	-	-	-
Phenanthrene by GCMS	0.000343	<0.000005	0.00343	<0.00005	-	-	-
Fluorene by GCMS	0.0000265	<0.000005	0.000265	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000837	<0.000082	0.00837	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.11
Conductivity (µS/cm)	379.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750403
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O16
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.021	<0.01	0.21	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.11
Conductivity (µS/cm)	379.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750411
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O16
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.19	<0.2	11.9	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00502	<0.0005	0.0502	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00223	<0.001	0.0223	<0.01	-	-	-
Copper	0.0193	<0.0003	0.193	<0.003	-	-	-
Lead	0.000293	<0.0002	0.00293	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00346	<0.0004	0.0346	<0.004	-	-	-
Selenium	0.00637	<0.001	0.0637	<0.01	-	-	-
Vanadium	0.161	<0.001	1.61	<0.01	-	-	-
Zinc	0.0023	<0.001	0.023	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.198	<0.019	1.98	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000104	<0.00001	0.00104	<0.0001	-	-	-
Acenaphthene by GCMS	0.000198	<0.000005	0.00198	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000202	<0.000005	0.00202	<0.00005	-	-	-
Anthracene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Phenanthrene by GCMS	0.000781	<0.000005	0.00781	<0.00005	-	-	-
Fluorene by GCMS	0.0000397	<0.000005	0.000397	<0.00005	-	-	-
Chrysene by GCMS	0.0000069	<0.000005	0.000069	<0.00005	-	-	-
Pyrene by GCMS	0.000163	<0.000005	0.00163	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000514	<0.000005	0.0000514	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00161	<0.000082	0.0161	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.19
Conductivity (µS/cm)	449.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750411
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O16
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.038	<0.01	0.38	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.19
Conductivity (µS/cm)	449.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.2
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750429
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-P15
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000162	<0.00001	0.000162	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0055	<0.0055	<0.055	<0.055	-	-	-
Cadmium	<0.00088	<0.00088	<0.0088	<0.0088	-	-	-
Chromium	<0.011	<0.011	<0.11	<0.11	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0022	<0.0022	<0.022	<0.022	-	-	-
Manganese	<0.033	<0.033	<0.33	<0.33	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.011	<0.011	<0.11	<0.11	-	-	-
Vanadium	0.0433	<0.011	0.433	<0.11	-	-	-
Zinc	0.0124	<0.011	0.124	<0.11	-	-	-
Iron (Dis.Filt) mg/l	<0.209	<0.209	<2.09	<2.09	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000201	<0.00001	0.00201	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000272	<0.000005	0.000272	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00005	<0.000005	0.0005	<0.00005	-	-	-
Anthracene by GCMS	0.00000995	<0.000005	0.0000995	<0.00005	-	-	-
Phenanthrene by GCMS	0.000056	<0.000005	0.00056	<0.00005	-	-	-
Fluorene by GCMS	0.00000796	<0.000005	0.0000796	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000853	<0.000005	0.000853	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000437	<0.000082	0.00437	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.05
Conductivity (µS/cm)	395.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.2
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750429
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-P15
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.05
Conductivity (µS/cm)	395.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750436
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-P15
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.000012	<0.00001	0.00012	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00429	<0.0005	0.0429	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00102	<0.001	0.0102	<0.01	-	-	-
Copper	0.00402	<0.0003	0.0402	<0.003	-	-	-
Lead	0.00029	<0.0002	0.0029	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00272	<0.001	0.0272	<0.01	-	-	-
Vanadium	0.0609	<0.001	0.609	<0.01	-	-	-
Zinc	0.00247	<0.001	0.0247	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000032	<0.00001	0.00032	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000256	<0.000005	0.000256	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000856	<0.000005	0.000856	<0.00005	-	-	-
Anthracene by GCMS	0.0000134	<0.000005	0.000134	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000761	<0.000005	0.000761	<0.00005	-	-	-
Fluorene by GCMS	0.00000678	<0.000005	0.0000678	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000099	<0.000005	0.00099	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000948	<0.000002	0.0000948	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000794	<0.000005	0.0000794	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000382	<0.000082	0.00382	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	358.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750436
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-P15
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.013	<0.01	0.13	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	358.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750440
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-P15
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.48	<0.2	14.8	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0143	<0.0055	0.143	<0.055	-	-	-
Cadmium	<0.00088	<0.00088	<0.0088	<0.0088	-	-	-
Chromium	<0.011	<0.011	<0.11	<0.11	-	-	-
Copper	0.00308	<0.0003	0.0308	<0.003	-	-	-
Lead	<0.0022	<0.0022	<0.022	<0.022	-	-	-
Manganese	<0.033	<0.033	<0.33	<0.33	-	-	-
Nickel	0.000877	<0.0004	0.00877	<0.004	-	-	-
Selenium	<0.011	<0.011	<0.11	<0.11	-	-	-
Vanadium	0.141	<0.011	1.41	<0.11	-	-	-
Zinc	<0.011	<0.011	<0.11	<0.11	-	-	-
Iron (Dis.Filt) mg/l	<0.209	<0.209	<2.09	<2.09	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000585	<0.00001	0.000585	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000372	<0.000005	0.000372	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000224	<0.000005	0.000224	<0.00005	-	-	-
Anthracene by GCMS	0.00000654	<0.000005	0.0000654	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000417	<0.000005	0.000417	<0.00005	-	-	-
Fluorene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000201	<0.000005	0.000201	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000204	<0.000082	0.00204	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.03
Conductivity (µS/cm)	196.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750440
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-P15
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.016	<0.01	0.16	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.04	<0.01	0.4	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.03
Conductivity (µS/cm)	196.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750445
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-P15
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.16	<0.2	11.6	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000313	<0.00001	0.000313	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00817	<0.0005	0.0817	<0.005	-	-	-
Cadmium	0.000139	<0.00008	0.00139	<0.0008	-	-	-
Chromium	0.00279	<0.001	0.0279	<0.01	-	-	-
Copper	0.00728	<0.0003	0.0728	<0.003	-	-	-
Lead	0.0115	<0.0002	0.115	<0.002	-	-	-
Manganese	0.0501	<0.003	0.501	<0.03	-	-	-
Nickel	0.00256	<0.0004	0.0256	<0.004	-	-	-
Selenium	0.00607	<0.001	0.0607	<0.01	-	-	-
Vanadium	0.198	<0.001	1.98	<0.01	-	-	-
Zinc	0.0173	<0.001	0.173	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.456	<0.019	4.56	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000381	<0.00001	0.000381	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000237	<0.000005	0.000237	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000208	<0.000005	0.000208	<0.00005	-	-	-
Fluorene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000118	<0.000082	0.00118	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.081	<0.05	0.81	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.27
Conductivity (µS/cm)	263.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750445
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-P15
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.036	<0.01	0.36	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.024	<0.01	0.24	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.081	<0.01	0.81	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.27
Conductivity (µS/cm)	263.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750455
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP12
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00228	<0.0005	0.0228	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00116	<0.001	0.0116	<0.01	-	-	-
Copper	0.00477	<0.0003	0.0477	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00201	<0.0004	0.0201	<0.004	-	-	-
Selenium	0.00152	<0.001	0.0152	<0.01	-	-	-
Vanadium	0.00238	<0.001	0.0238	<0.01	-	-	-
Zinc	0.00197	<0.001	0.0197	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000998	<0.000005	0.0000998	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000092	<0.000005	0.000092	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.66
Conductivity (µS/cm)	232.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750455
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP12
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.66
Conductivity (µS/cm)	232.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750469
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-R16
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000115	<0.00001	0.000115	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000752	<0.0005	0.00752	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0015	<0.001	0.015	<0.01	-	-	-
Copper	0.00434	<0.0003	0.0434	<0.003	-	-	-
Lead	0.000504	<0.0002	0.00504	<0.002	-	-	-
Manganese	0.0117	<0.003	0.117	<0.03	-	-	-
Nickel	0.00088	<0.0004	0.0088	<0.004	-	-	-
Selenium	0.00253	<0.001	0.0253	<0.01	-	-	-
Vanadium	0.0359	<0.001	0.359	<0.01	-	-	-
Zinc	0.00723	<0.001	0.0723	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.49	<0.019	4.9	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00014	<0.00001	0.0014	<0.0001	-	-	-
Acenaphthene by GCMS	0.000263	<0.000005	0.00263	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00158	<0.000005	0.0158	<0.00005	-	-	-
Anthracene by GCMS	0.000222	<0.000005	0.00222	<0.00005	-	-	-
Phenanthrene by GCMS	0.00174	<0.000005	0.0174	<0.00005	-	-	-
Fluorene by GCMS	0.0000228	<0.000005	0.000228	<0.00005	-	-	-
Chrysene by GCMS	0.0000729	<0.000005	0.000729	<0.00005	-	-	-
Pyrene by GCMS	0.00149	<0.000005	0.0149	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000727	<0.000005	0.000727	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000255	<0.000005	0.000255	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000896	<0.000002	0.0000896	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00565	<0.000082	0.0565	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.40
Conductivity (µS/cm)	704.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750469
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-R16
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.40
Conductivity (µS/cm)	704.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750474
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-R16
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00111	<0.0005	0.0111	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00107	<0.001	0.0107	<0.01	-	-	-
Copper	0.0023	<0.0003	0.023	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000421	<0.0004	0.00421	<0.004	-	-	-
Selenium	0.00209	<0.001	0.0209	<0.01	-	-	-
Vanadium	0.0373	<0.001	0.373	<0.01	-	-	-
Zinc	0.00633	<0.001	0.0633	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000107	<0.00001	0.00107	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000705	<0.000005	0.000705	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000299	<0.000005	0.00299	<0.00005	-	-	-
Anthracene by GCMS	0.0000521	<0.000005	0.000521	<0.00005	-	-	-
Phenanthrene by GCMS	0.000213	<0.000005	0.00213	<0.00005	-	-	-
Fluorene by GCMS	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Chrysene by GCMS	0.0000946	<0.000005	0.000946	<0.00005	-	-	-
Pyrene by GCMS	0.00165	<0.000005	0.0165	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000884	<0.000005	0.000884	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000334	<0.000005	0.000334	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000123	<0.000002	0.000123	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000546	<0.000005	0.0000546	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00265	<0.000082	0.0265	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.16
Conductivity (µS/cm)	424.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750474
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-R16
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.01	<0.01	0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.16
Conductivity (µS/cm)	424.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750485
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-S18
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00154	<0.0005	0.0154	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0125	<0.001	0.125	<0.01	-	-	-
Vanadium	0.144	<0.001	1.44	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000447	<0.00001	0.000447	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000341	<0.000005	0.000341	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000875	<0.000005	0.000875	<0.00005	-	-	-
Anthracene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Phenanthrene by GCMS	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Fluorene by GCMS	0.00000886	<0.000005	0.0000886	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000838	<0.000005	0.000838	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000382	<0.000082	0.00382	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.74
Conductivity (µS/cm)	234.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750485
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-S18
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.74
Conductivity (µS/cm)	234.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750492
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-S18
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.545	<0.2	5.45	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0312	<0.0005	0.312	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0035	<0.003	0.035	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00161	<0.001	0.0161	<0.01	-	-	-
Vanadium	0.0271	<0.001	0.271	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000163	<0.00001	0.000163	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000273	<0.000005	0.000273	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000088	<0.000005	0.000088	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000219	<0.000005	0.000219	<0.00005	-	-	-
Fluorene by GCMS	0.00000719	<0.000005	0.0000719	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000709	<0.000005	0.0000709	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000886	<0.000082	0.000886	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.48
Conductivity (µS/cm)	146.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750492
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-S18
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.48
Conductivity (µS/cm)	146.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750496
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-S18
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.21	<0.2	12.1	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000127	<0.00001	0.000127	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00134	<0.0005	0.0134	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0255	<0.003	0.255	<0.03	-	-	-
Nickel	0.00107	<0.0004	0.0107	<0.004	-	-	-
Selenium	0.00685	<0.001	0.0685	<0.01	-	-	-
Vanadium	0.0011	<0.001	0.011	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.16
Conductivity (µS/cm)	175.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750496
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-S18
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.16
Conductivity (µS/cm)	175.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750504
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-Q18
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00117	<0.001	0.0117	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.00148	<0.0002	0.0148	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00415	<0.001	0.0415	<0.01	-	-	-
Zinc	0.104	<0.001	1.04	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.23	<0.019	2.3	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000521	<0.00001	0.000521	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000023	<0.000005	0.00023	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000681	<0.000005	0.000681	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000186	<0.000005	0.000186	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000173	<0.000082	0.00173	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.65
Conductivity (µS/cm)	1,080.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750504
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-Q18
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.65
Conductivity (µS/cm)	1,080.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750528
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-Q20
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000123	<0.00001	0.000123	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00792	<0.0005	0.0792	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00133	<0.001	0.0133	<0.01	-	-	-
Copper	0.00581	<0.0003	0.0581	<0.003	-	-	-
Lead	0.00175	<0.0002	0.0175	<0.002	-	-	-
Manganese	0.0126	<0.003	0.126	<0.03	-	-	-
Nickel	0.00128	<0.0004	0.0128	<0.004	-	-	-
Selenium	0.0197	<0.001	0.197	<0.01	-	-	-
Vanadium	0.0254	<0.001	0.254	<0.01	-	-	-
Zinc	0.00439	<0.001	0.0439	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.292	<0.019	2.92	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000117	<0.00001	0.000117	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.35
Conductivity (µS/cm)	124.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750528
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-Q20
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.023	<0.01	0.23	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.35
Conductivity (µS/cm)	124.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750532
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-Q20
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.17	<0.2	11.7	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000231	<0.00001	0.000231	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00453	<0.0005	0.0453	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00166	<0.001	0.0166	<0.01	-	-	-
Copper	0.00197	<0.0003	0.0197	<0.003	-	-	-
Lead	0.00247	<0.0002	0.0247	<0.002	-	-	-
Manganese	0.0522	<0.003	0.522	<0.03	-	-	-
Nickel	0.000688	<0.0004	0.00688	<0.004	-	-	-
Selenium	0.00491	<0.001	0.0491	<0.01	-	-	-
Vanadium	0.0284	<0.001	0.284	<0.01	-	-	-
Zinc	0.00838	<0.001	0.0838	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.433	<0.019	4.33	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.92
Conductivity (µS/cm)	109.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750532
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-Q20
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.92
Conductivity (µS/cm)	109.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750549
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O14
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0055	<0.0055	<0.055	<0.055	-	-	-
Cadmium	<0.00088	<0.00088	<0.0088	<0.0088	-	-	-
Chromium	<0.011	<0.011	<0.11	<0.11	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0022	<0.0022	<0.022	<0.022	-	-	-
Manganese	<0.033	<0.033	<0.33	<0.33	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.011	<0.011	<0.11	<0.11	-	-	-
Vanadium	0.0359	<0.011	0.359	<0.11	-	-	-
Zinc	<0.011	<0.011	<0.11	<0.11	-	-	-
Iron (Dis.Filt) mg/l	<0.209	<0.209	<2.09	<2.09	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000527	<0.000005	0.0000527	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000579	<0.000005	0.0000579	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	9.31
Conductivity (µS/cm)	295.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750549
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-O14
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	9.31
Conductivity (µS/cm)	295.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.145	**Natural Moisture Content (%)**	61.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	62
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750558
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-N13
Depth (m)	1.10 - 1.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	2.67	<0.2	26.7	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00809	<0.0005	0.0809	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00191	<0.001	0.0191	<0.01	-	-	-
Copper	0.00514	<0.0003	0.0514	<0.003	-	-	-
Lead	0.00139	<0.0002	0.0139	<0.002	-	-	-
Manganese	0.035	<0.003	0.35	<0.03	-	-	-
Nickel	0.00635	<0.0004	0.0635	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00501	<0.001	0.0501	<0.01	-	-	-
Zinc	0.00254	<0.001	0.0254	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.489	<0.019	4.89	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	7.84
Conductivity (µS/cm)	93.70
Temperature (°C)	19.40
Volume Leachant (Litres)	0.845

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.145	**Natural Moisture Content (%)**	61.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	62
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750558
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-N13
Depth (m)	1.10 - 1.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.024	<0.01	0.24	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	7.84
Conductivity (µS/cm)	93.70
Temperature (°C)	19.40
Volume Leachant (Litres)	0.845

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750562
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-N13
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000814	<0.0005	0.00814	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00144	<0.0003	0.0144	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00859	<0.003	0.0859	<0.03	-	-	-
Nickel	0.000883	<0.0004	0.00883	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00126	<0.001	0.0126	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.456	<0.019	4.56	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000692	<0.000005	0.0000692	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.49
Conductivity (µS/cm)	84.50
Temperature (°C)	19.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750562
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-N13
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.49
Conductivity (µS/cm)	84.50
Temperature (°C)	19.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750579
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-P13
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00186	<0.0005	0.0186	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00503	<0.001	0.0503	<0.01	-	-	-
Vanadium	0.00417	<0.001	0.0417	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.563	<0.019	5.63	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.62
Conductivity (µS/cm)	159.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750579
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-P13
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.012	<0.01	0.12	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.62
Conductivity (µS/cm)	159.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750583
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP13
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00317	<0.003	0.0317	<0.03	-	-	-
Nickel	0.00113	<0.0004	0.0113	<0.004	-	-	-
Selenium	0.00271	<0.001	0.0271	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000108	<0.00001	0.000108	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000841	<0.000005	0.0000841	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.58
Conductivity (µS/cm)	266.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750583
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP13
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.58
Conductivity (µS/cm)	266.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.1
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750588
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-P13
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.364	<0.2	3.64	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00616	<0.0005	0.0616	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00124	<0.001	0.0124	<0.01	-	-	-
Vanadium	0.00971	<0.001	0.0971	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000331	<0.00001	0.000331	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	9.34
Conductivity (µS/cm)	84.70
Temperature (°C)	19.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.1
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750588
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-P13
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	9.34
Conductivity (µS/cm)	84.70
Temperature (°C)	19.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750601
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-S12
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00306	<0.0005	0.0306	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0573	<0.003	0.573	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00212	<0.001	0.0212	<0.01	-	-	-
Vanadium	0.0115	<0.001	0.115	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000266	<0.00001	0.000266	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000824	<0.000005	0.0000824	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000877	<0.000005	0.0000877	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.94
Conductivity (µS/cm)	132.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750601
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-S12
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.015	<0.01	0.15	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.94
Conductivity (µS/cm)	132.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750606
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-S12
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.78	<0.2	17.8	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00164	<0.0005	0.0164	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.155	<0.003	1.55	<0.03	-	-	-
Nickel	0.00214	<0.0004	0.0214	<0.004	-	-	-
Selenium	0.00332	<0.001	0.0332	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00295	<0.001	0.0295	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.954	<0.019	9.54	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	7.38
Conductivity (µS/cm)	232.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750606
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-S12
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	7.38
Conductivity (µS/cm)	232.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750614
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-P13
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.464	<0.2	4.64	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00237	<0.0005	0.0237	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000605	<0.0002	0.00605	<0.002	-	-	-
Manganese	0.115	<0.003	1.15	<0.03	-	-	-
Nickel	0.000557	<0.0004	0.00557	<0.004	-	-	-
Selenium	0.0055	<0.001	0.055	<0.01	-	-	-
Vanadium	0.00393	<0.001	0.0393	<0.01	-	-	-
Zinc	0.00468	<0.001	0.0468	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.773	<0.019	7.73	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000116	<0.00001	0.000116	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.54
Conductivity (µS/cm)	151.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750614
Sampled Date	14-Jun-2018
Customer Sample Ref.	40A-P13
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.01	<0.01	0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	8.54
Conductivity (µS/cm)	151.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.124	**Natural Moisture Content (%)**	37
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	73
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750622
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP13
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.555	<0.2	5.55	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0022	<0.0005	0.022	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.423	<0.003	4.23	<0.03	-	-	-
Nickel	0.00111	<0.0004	0.0111	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000173	<0.00001	0.000173	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	7.91
Conductivity (µS/cm)	464.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.867

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.124	**Natural Moisture Content (%)**	37
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	73
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750622
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP13
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.012	<0.01	0.12	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	7.91
Conductivity (µS/cm)	464.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.867

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750635
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP14
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00164	<0.0005	0.0164	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0015	<0.001	0.015	<0.01	-	-	-
Copper	0.00299	<0.0003	0.0299	<0.003	-	-	-
Lead	0.00147	<0.0002	0.0147	<0.002	-	-	-
Manganese	0.00642	<0.003	0.0642	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00708	<0.001	0.0708	<0.01	-	-	-
Vanadium	0.0987	<0.001	0.987	<0.01	-	-	-
Zinc	0.00243	<0.001	0.0243	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.404	<0.019	4.04	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000123	<0.00001	0.00123	<0.0001	-	-	-
Acenaphthene by GCMS	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000124	<0.000005	0.00124	<0.00005	-	-	-
Anthracene by GCMS	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Phenanthrene by GCMS	0.000156	<0.000005	0.00156	<0.00005	-	-	-
Fluorene by GCMS	0.0000259	<0.000005	0.000259	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000712	<0.000082	0.00712	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.11
Conductivity (µS/cm)	442.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750635
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP14
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	11.11
Conductivity (µS/cm)	442.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750640
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP14
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0055	<0.0055	<0.055	<0.055	-	-	-
Cadmium	<0.00088	<0.00088	<0.0088	<0.0088	-	-	-
Chromium	<0.011	<0.011	<0.11	<0.11	-	-	-
Copper	0.00131	<0.0003	0.0131	<0.003	-	-	-
Lead	<0.0022	<0.0022	<0.022	<0.022	-	-	-
Manganese	<0.033	<0.033	<0.33	<0.33	-	-	-
Nickel	0.000424	<0.0004	0.00424	<0.004	-	-	-
Selenium	<0.011	<0.011	<0.11	<0.11	-	-	-
Vanadium	0.0755	<0.011	0.755	<0.11	-	-	-
Zinc	<0.011	<0.011	<0.11	<0.11	-	-	-
Iron (Dis.Filt) mg/l	<0.209	<0.209	<2.09	<2.09	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000888	<0.00001	0.000888	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000972	<0.000005	0.000972	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Anthracene by GCMS	0.0000181	<0.000005	0.000181	<0.00005	-	-	-
Phenanthrene by GCMS	0.000139	<0.000005	0.00139	<0.00005	-	-	-
Fluorene by GCMS	0.0000232	<0.000005	0.000232	<0.00005	-	-	-
Chrysene by GCMS	0.00000898	<0.000005	0.0000898	<0.00005	-	-	-
Pyrene by GCMS	0.000132	<0.000005	0.00132	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000958	<0.000005	0.0000958	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000628	<0.000082	0.00628	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.96
Conductivity (µS/cm)	531.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180615-113
Lab Sample Number(s)	17750640
Sampled Date	14-Jun-2018
Customer Sample Ref.	RLS2-TP14
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	18-Jun-2018
pH (pH Units)	10.96
Conductivity (µS/cm)	531.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

26/06/2018 13:47:30

13:46:50 26/06/2018

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Test Completion Dates

Lab Sample No(s)	17750558	17750562	17750574	17750542	17750549	17750391	17750397	17750403	17750411	17750336
Customer Sample Ref.	40A-N13	40A-N13	40A-N13-V	40A-N20-V	40A-O14	40A-O16	40A-O16	40A-O16	40A-O16	40A-O17
AGS Ref.										
Depth	1.10 - 1.10	0.50 - 0.50	1.00 - 1.00	0.80 - 0.80	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		19-Jun-2018			21-Jun-2018	20-Jun-2018			21-Jun-2018	20-Jun-2018
Ammoniacal Nitrogen	21-Jun-2018	21-Jun-2018			21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018
Ammonium Soil by Titration	19-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018
Anions by Kone (soil)		21-Jun-2018			21-Jun-2018	22-Jun-2018			22-Jun-2018	21-Jun-2018
Asbestos ID in Solid Samples		21-Jun-2018			20-Jun-2018	21-Jun-2018			21-Jun-2018	21-Jun-2018
Asbestos Quantification - Full						22-Jun-2018				22-Jun-2018
CEN 10:1 Leachate (1 Stage)	18-Jun-2018	18-Jun-2018			18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
CEN Readings	22-Jun-2018	22-Jun-2018			22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018
Dissolved Metals by ICP-MS	22-Jun-2018	25-Jun-2018			25-Jun-2018	25-Jun-2018	25-Jun-2018	25-Jun-2018	25-Jun-2018	25-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	22-Jun-2018	22-Jun-2018			22-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018
EPH CWG (Aliphatic) GC (S)	22-Jun-2018	21-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	22-Jun-2018	22-Jun-2018			22-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018
EPH CWG (Aromatic) GC (S)	22-Jun-2018	21-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
GRO by GC-FID (S)	20-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018	20-Jun-2018
GRO by GC-FID (W)	21-Jun-2018	21-Jun-2018			19-Jun-2018	19-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	19-Jun-2018
Mercury Dissolved	21-Jun-2018	20-Jun-2018			21-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018
Metals in solid samples by OES	20-Jun-2018	19-Jun-2018	20-Jun-2018	21-Jun-2018	20-Jun-2018	19-Jun-2018	20-Jun-2018	21-Jun-2018	20-Jun-2018	19-Jun-2018
PAH by GCMS	20-Jun-2018	20-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	19-Jun-2018	20-Jun-2018	21-Jun-2018
PAH Spec MS - Aqueous (W)	21-Jun-2018	21-Jun-2018			21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	20-Jun-2018
pH	19-Jun-2018	17-Jun-2018	21-Jun-2018	19-Jun-2018	20-Jun-2018	21-Jun-2018	19-Jun-2018	17-Jun-2018	17-Jun-2018	20-Jun-2018
pH Value	21-Jun-2018	21-Jun-2018			21-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018
Phenols by HPLC (S)	22-Jun-2018	20-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	19-Jun-2018	19-Jun-2018	22-Jun-2018
Sample description	16-Jun-2018	16-Jun-2018	16-Jun-2018	15-Jun-2018	16-Jun-2018	16-Jun-2018	15-Jun-2018	16-Jun-2018	16-Jun-2018	15-Jun-2018
Total Organic Carbon	21-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018
Total Sulphate		20-Jun-2018			20-Jun-2018	20-Jun-2018			20-Jun-2018	20-Jun-2018
Total Sulphur		21-Jun-2018			21-Jun-2018	21-Jun-2018			21-Jun-2018	21-Jun-2018
TPH CWG (W)	22-Jun-2018	22-Jun-2018			22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018
TPH CWG GC (S)	22-Jun-2018	21-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
VOC MS (S)	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018

Lab Sample No(s)	17750343	17750355	17750363	17750554	17750425	17750384	17750579	17750588	17750614	17750429
Customer Sample Ref.	40A-O17	40A-O17	40A-O17	40A-O14-V	40A-O16-V	40A-O17-V	40A-P13	40A-P13	40A-P13	40A-P15
AGS Ref.										
Depth	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	0.70 - 0.70	3.60 - 3.60	4.00 - 4.00	0.40 - 0.40	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		20-Jun-2018						25-Jun-2018	25-Jun-2018	
Ammoniacal Nitrogen	21-Jun-2018	21-Jun-2018	21-Jun-2018				21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018
Ammonium Soil by Titration	21-Jun-2018	20-Jun-2018	21-Jun-2018	20-Jun-2018	20-Jun-2018	19-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018
Anions by Kone (soil)		22-Jun-2018						20-Jun-2018	20-Jun-2018	
Asbestos ID in Solid Samples		21-Jun-2018						21-Jun-2018	21-Jun-2018	
Asbestos Quantification - Full		22-Jun-2018								
CEN 10:1 Leachate (1 Stage)	18-Jun-2018	18-Jun-2018	18-Jun-2018				18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
CEN Readings	22-Jun-2018	22-Jun-2018	22-Jun-2018				22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	20-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
Dissolved Metals by ICP-MS	25-Jun-2018	25-Jun-2018	25-Jun-2018				25-Jun-2018	22-Jun-2018	25-Jun-2018	25-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)	22-Jun-2018	22-Jun-2018	21-Jun-2018				22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
EPH CWG (Aliphatic) GC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	22-Jun-2018	22-Jun-2018	21-Jun-2018				22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
EPH CWG (Aromatic) GC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
GRO by GC-FID (S)	21-Jun-2018	21-Jun-2018	21-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018
GRO by GC-FID (W)	21-Jun-2018	22-Jun-2018	19-Jun-2018				22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018
Mercury Dissolved	20-Jun-2018	21-Jun-2018	20-Jun-2018				21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018
Metals in solid samples by OES	21-Jun-2018	19-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018	20-Jun-2018
PAH by GCMS	20-Jun-2018	20-Jun-2018	21-Jun-2018	21-Jun-2018	20-Jun-2018	21-Jun-2018	19-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018
PAH Spec MS - Aqueous (W)	21-Jun-2018	22-Jun-2018	20-Jun-2018				22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018
pH	20-Jun-2018	20-Jun-2018	21-Jun-2018	19-Jun-2018	17-Jun-2018	21-Jun-2018	17-Jun-2018	17-Jun-2018	20-Jun-2018	19-Jun-2018
pH Value	21-Jun-2018	21-Jun-2018	20-Jun-2018				21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018
Phenols by HPLC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	19-Jun-2018	22-Jun-2018	19-Jun-2018	19-Jun-2018	22-Jun-2018	21-Jun-2018
Sample description	16-Jun-2018	15-Jun-2018	15-Jun-2018	16-Jun-2018	16-Jun-2018	15-Jun-2018	16-Jun-2018	16-Jun-2018	16-Jun-2018	15-Jun-2018
Total Organic Carbon	20-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018
Total Sulphate		20-Jun-2018						20-Jun-2018	20-Jun-2018	
Total Sulphur		21-Jun-2018						21-Jun-2018	21-Jun-2018	
TPH CWG (W)	22-Jun-2018	22-Jun-2018	21-Jun-2018				22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
TPH CWG GC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
VOC MS (S)	21-Jun-2018	21-Jun-2018	21-Jun-2018	20-Jun-2018	21-Jun-2018	21-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Lab Sample No(s)	17750436	17750440	17750445	17750592	17750462	17750504	17750528	17750532	17750514	17750538
Customer Sample Ref.	40A-P15	40A-P15	40A-P15	40A-P13-V	40A-P15-V	40A-Q18	40A-Q20	40A-Q20	40A-Q18-V	40A-Q20-V
AGS Ref.										
Depth	1.00 - 1.00	2.00 - 2.00	3.00 - 3.00	2.00 - 2.00	4.20 - 4.20	0.20 - 0.20	0.80 - 0.80	1.50 - 1.50	0.30 - 0.30	1.80 - 1.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	21-Jun-2018	20-Jun-2018				25-Jun-2018	21-Jun-2018			
Ammoniacal Nitrogen	21-Jun-2018	21-Jun-2018	21-Jun-2018			21-Jun-2018	21-Jun-2018	21-Jun-2018		
Ammonium Soil by Titration	21-Jun-2018	19-Jun-2018	21-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	19-Jun-2018	20-Jun-2018
Anions by Kone (soil)	21-Jun-2018	20-Jun-2018				20-Jun-2018	20-Jun-2018			
Asbestos ID in Solid Samples	20-Jun-2018	21-Jun-2018				21-Jun-2018	21-Jun-2018			
Asbestos Quantification - Full	22-Jun-2018	22-Jun-2018				22-Jun-2018				
CEN 10:1 Leachate (1 Stage)	18-Jun-2018	18-Jun-2018	19-Jun-2018			19-Jun-2018	19-Jun-2018	18-Jun-2018		
CEN Readings	22-Jun-2018	22-Jun-2018	22-Jun-2018			22-Jun-2018	22-Jun-2018	22-Jun-2018		
Cyanide Comp/Free/Total/Thiocyanate	22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
Dissolved Metals by ICP-MS	25-Jun-2018	25-Jun-2018	25-Jun-2018			25-Jun-2018	25-Jun-2018	25-Jun-2018		
EPH CWG (Aliphatic) Aqueous GC (W)	22-Jun-2018	22-Jun-2018	22-Jun-2018			22-Jun-2018	22-Jun-2018	22-Jun-2018		
EPH CWG (Aliphatic) GC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	22-Jun-2018	22-Jun-2018	22-Jun-2018			22-Jun-2018	22-Jun-2018	22-Jun-2018		
EPH CWG (Aromatic) GC (S)	22-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
GRO by GC-FID (S)	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018
GRO by GC-FID (W)	22-Jun-2018	21-Jun-2018	22-Jun-2018			22-Jun-2018	22-Jun-2018	22-Jun-2018		
Mercury Dissolved	21-Jun-2018	21-Jun-2018	22-Jun-2018			21-Jun-2018	21-Jun-2018	22-Jun-2018		
Metals in solid samples by OES	20-Jun-2018	19-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018	21-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018
PAH by GCMS	21-Jun-2018	21-Jun-2018	20-Jun-2018	19-Jun-2018	21-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018
PAH Spec MS - Aqueous (W)	22-Jun-2018	21-Jun-2018	22-Jun-2018			22-Jun-2018	22-Jun-2018	22-Jun-2018		
pH	22-Jun-2018	20-Jun-2018	17-Jun-2018	17-Jun-2018	19-Jun-2018	17-Jun-2018	20-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018
pH Value	21-Jun-2018	21-Jun-2018	21-Jun-2018			21-Jun-2018	21-Jun-2018	21-Jun-2018		
Phenols by HPLC (S)	21-Jun-2018	22-Jun-2018	22-Jun-2018	19-Jun-2018	22-Jun-2018	19-Jun-2018	21-Jun-2018	22-Jun-2018	21-Jun-2018	21-Jun-2018
Sample description	15-Jun-2018	15-Jun-2018	16-Jun-2018	16-Jun-2018	15-Jun-2018	16-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018
Total Organic Carbon	20-Jun-2018	21-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
Total Sulphate	20-Jun-2018	20-Jun-2018				20-Jun-2018	20-Jun-2018			
Total Sulphur	21-Jun-2018	21-Jun-2018				21-Jun-2018	21-Jun-2018			
TPH CWG (W)	22-Jun-2018	22-Jun-2018	22-Jun-2018			22-Jun-2018	22-Jun-2018	22-Jun-2018		
TPH CWG GC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
VOC MS (S)	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018

Lab Sample No(s)	17750469	17750474	17750597	17750480	17750601	17750606	17750485	17750492	17750496	17750610
Customer Sample Ref.	40A-R16	40A-R16	40A-R13-V	40A-R16-V	40A-S12	40A-S12	40A-S18	40A-S18	40A-S18	40A-S12-V
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	0.20 - 0.20	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	1.80 - 1.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	25-Jun-2018				25-Jun-2018		20-Jun-2018		20-Jun-2018	
Ammoniacal Nitrogen	21-Jun-2018	21-Jun-2018			21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	
Ammonium Soil by Titration	21-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	20-Jun-2018
Anions by Kone (soil)	21-Jun-2018				20-Jun-2018		22-Jun-2018		22-Jun-2018	
Asbestos ID in Solid Samples	20-Jun-2018				21-Jun-2018		21-Jun-2018		21-Jun-2018	
Asbestos Quantification - Full							22-Jun-2018			
CEN 10:1 Leachate (1 Stage)	18-Jun-2018	18-Jun-2018			18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	
CEN Readings	22-Jun-2018	22-Jun-2018			22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	
Cyanide Comp/Free/Total/Thiocyanate	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
Dissolved Metals by ICP-MS	22-Jun-2018	22-Jun-2018			22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	22-Jun-2018	22-Jun-2018			22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	
EPH CWG (Aliphatic) GC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	22-Jun-2018	22-Jun-2018			22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	
EPH CWG (Aromatic) GC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018
GRO by GC-FID (S)	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018
GRO by GC-FID (W)	22-Jun-2018	22-Jun-2018			22-Jun-2018	22-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	
Mercury Dissolved	21-Jun-2018	21-Jun-2018			21-Jun-2018	21-Jun-2018	26-Jun-2018	21-Jun-2018	21-Jun-2018	
Metals in solid samples by OES	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018	21-Jun-2018	19-Jun-2018	20-Jun-2018	19-Jun-2018	20-Jun-2018
PAH by GCMS	20-Jun-2018	21-Jun-2018	20-Jun-2018	21-Jun-2018	19-Jun-2018	21-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018	20-Jun-2018
PAH Spec MS - Aqueous (W)	22-Jun-2018	22-Jun-2018			22-Jun-2018	22-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	
pH	21-Jun-2018	20-Jun-2018	19-Jun-2018	20-Jun-2018	17-Jun-2018	19-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	19-Jun-2018
pH Value	21-Jun-2018	21-Jun-2018			21-Jun-2018	21-Jun-2018	22-Jun-2018	21-Jun-2018	21-Jun-2018	
Phenols by HPLC (S)	21-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018	19-Jun-2018	20-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018
Sample description	15-Jun-2018	16-Jun-2018	16-Jun-2018	15-Jun-2018	16-Jun-2018	16-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	16-Jun-2018
Total Organic Carbon	20-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018	21-Jun-2018
Total Sulphate	20-Jun-2018				20-Jun-2018		20-Jun-2018		20-Jun-2018	
Total Sulphur	21-Jun-2018				21-Jun-2018		20-Jun-2018		21-Jun-2018	
TPH CWG (W)	22-Jun-2018	22-Jun-2018			22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	
TPH CWG GC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018
VOC MS (S)	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180615-113	**Client Reference:**		**Report Number:**	461760
Location:	Llanwern	**Order Number:**	LLA448	**Superseded Report:**	461458

Lab Sample No(s)	17750500	17750281	17750455	17750583	17750622	17750294	17750635	17750640	17750306	17750313
Customer Sample Ref.	40A-S18-V	RLS2-TP11	RLS2-TP12	RLS2-TP13	RLS2-TP13	RLS2-TP14	RLS2-TP14	RLS2-TP14	RLS2-TP15	RLS2-TP15
AGS Ref.										
Depth	2.30 - 2.30	0.50 - 0.50	0.50 - 0.50	0.20 - 0.20	0.50 - 0.50	2.00 - 2.00	0.80 - 0.80	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		20-Jun-2018	20-Jun-2018		21-Jun-2018	20-Jun-2018	21-Jun-2018		20-Jun-2018	
Ammoniacal Nitrogen		21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018
Ammonium Soil by Titration	21-Jun-2018	19-Jun-2018	20-Jun-2018	19-Jun-2018	19-Jun-2018	20-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	21-Jun-2018
Anions by Kone (soil)		21-Jun-2018	22-Jun-2018		22-Jun-2018	21-Jun-2018	21-Jun-2018		21-Jun-2018	
Asbestos ID in Solid Samples		21-Jun-2018	21-Jun-2018		21-Jun-2018	21-Jun-2018	21-Jun-2018		21-Jun-2018	
Asbestos Quantification - Full		22-Jun-2018				22-Jun-2018				
CEN 10:1 Leachate (1 Stage)		18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018	18-Jun-2018
CEN Readings		22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
Dissolved Metals by ICP-MS		22-Jun-2018	25-Jun-2018	22-Jun-2018	22-Jun-2018	25-Jun-2018	25-Jun-2018	25-Jun-2018	25-Jun-2018	25-Jun-2018
EPH CWG (Aliphatic) Aqueous GC (W)		22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
EPH CWG (Aliphatic) GC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)		22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
EPH CWG (Aromatic) GC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
GRO by GC-FID (S)	20-Jun-2018	21-Jun-2018	20-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018
GRO by GC-FID (W)		21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
Mercury Dissolved		21-Jun-2018	20-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018
Metals in solid samples by OES	20-Jun-2018	19-Jun-2018	19-Jun-2018	20-Jun-2018	20-Jun-2018	19-Jun-2018	20-Jun-2018	20-Jun-2018	19-Jun-2018	20-Jun-2018
PAH by GCMS	21-Jun-2018	21-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018	20-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	20-Jun-2018
PAH Spec MS - Aqueous (W)		21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018
pH	17-Jun-2018	20-Jun-2018	20-Jun-2018	19-Jun-2018	22-Jun-2018	22-Jun-2018	20-Jun-2018	19-Jun-2018	19-Jun-2018	20-Jun-2018
pH Value		21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018
Phenols by HPLC (S)	19-Jun-2018	22-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
Sample description	16-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	16-Jun-2018	15-Jun-2018	16-Jun-2018	16-Jun-2018
Total Organic Carbon	21-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018	21-Jun-2018	20-Jun-2018
Total Sulphate		20-Jun-2018	20-Jun-2018		20-Jun-2018	20-Jun-2018	20-Jun-2018		20-Jun-2018	
Total Sulphur		21-Jun-2018	21-Jun-2018		21-Jun-2018	20-Jun-2018	21-Jun-2018		21-Jun-2018	
TPH CWG (W)		22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
TPH CWG GC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
VOC MS (S)	20-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018

Lab Sample No(s)	17750319	17750370	17750522	17750631	17750300	17750328
Customer Sample Ref.	RLS2-TP15	RLS2-TP11-V	RLS2-TP12-V	RLS2-TP13-V	RLS2-TP14-V	RLS2-TP15-V
AGS Ref.						
Depth	1.50 - 1.50	0.80 - 0.80	0.70 - 0.70	0.65 - 0.65	2.25 - 2.25	2.30 - 2.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	20-Jun-2018					
Ammoniacal Nitrogen	21-Jun-2018					
Ammonium Soil by Titration	20-Jun-2018	20-Jun-2018	19-Jun-2018	19-Jun-2018	20-Jun-2018	19-Jun-2018
Anions by Kone (soil)	22-Jun-2018					
Asbestos ID in Solid Samples	21-Jun-2018					
Asbestos Quantification - Full	22-Jun-2018					
CEN 10:1 Leachate (1 Stage)	18-Jun-2018					
CEN Readings	22-Jun-2018					
Cyanide Comp/Free/Total/Thiocyanate	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
Dissolved Metals by ICP-MS	25-Jun-2018					
EPH CWG (Aliphatic) Aqueous GC (W)	22-Jun-2018					
EPH CWG (Aliphatic) GC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	22-Jun-2018					
EPH CWG (Aromatic) GC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
GRO by GC-FID (S)	21-Jun-2018	20-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018
GRO by GC-FID (W)	22-Jun-2018					
Mercury Dissolved	21-Jun-2018					
Metals in solid samples by OES	19-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018
PAH by GCMS	20-Jun-2018	20-Jun-2018	20-Jun-2018	20-Jun-2018	21-Jun-2018	20-Jun-2018
PAH Spec MS - Aqueous (W)	22-Jun-2018					
pH	22-Jun-2018	19-Jun-2018	19-Jun-2018	19-Jun-2018	21-Jun-2018	19-Jun-2018
pH Value	21-Jun-2018					
Phenols by HPLC (S)	22-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018
Sample description	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018	15-Jun-2018
Total Organic Carbon	21-Jun-2018	22-Jun-2018	21-Jun-2018	22-Jun-2018	22-Jun-2018	21-Jun-2018
Total Sulphate	20-Jun-2018					
Total Sulphur	21-Jun-2018					
TPH CWG (W)	22-Jun-2018					
TPH CWG GC (S)	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018	22-Jun-2018
VOC MS (S)	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018	21-Jun-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	13 July 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180626-3
Your Reference:	
Location:	Llanwern
Report No:	464218

This report has been revised and directly supersedes 464016 in its entirety.

We received 38 samples on Tuesday June 26, 2018 and 38 of these samples were scheduled for analysis which was completed on Friday July 13, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17814817	40A-H10		0.40 - 0.40	22/06/2018
17814822	40A-H10		1.00 - 1.00	22/06/2018
17814826	40A-H10		2.00 - 2.00	22/06/2018
17814835	40A-H10-V		3.30 - 3.30	22/06/2018
17814801	40A-J10		0.50 - 0.50	22/06/2018
17814805	40A-J10		1.00 - 1.00	22/06/2018
17814809	40A-J10		1.50 - 1.50	22/06/2018
17814813	40A-J10-V		2.70 - 2.70	22/06/2018
17814781	40A-K11		0.50 - 0.50	22/06/2018
17814789	40A-K11		1.00 - 1.00	22/06/2018
17814793	40A-K11		2.00 - 2.00	22/06/2018
17814839	40A-K13		0.50 - 0.50	22/06/2018
17814843	40A-K13		1.00 - 1.00	22/06/2018
17814849	40A-K13		2.00 - 2.00	22/06/2018
17814853	40A-K15		0.50 - 0.50	22/06/2018
17814797	40A-K11-V		2.90 - 2.90	22/06/2018
17814857	40A-K15-V		0.90 - 0.90	22/06/2018
17814861	40A-L17		0.70 - 0.70	22/06/2018
17814865	40A-L17		1.70 - 1.70	22/06/2018
17814869	40A-L17-V		3.20 - 3.20	22/06/2018
17814765	40A-N11		0.50 - 0.50	22/06/2018
17814769	40A-N11		1.00 - 1.00	22/06/2018
17814773	40A-N11		1.50 - 1.50	22/06/2018
17814777	40A-N11-V		2.20 - 2.20	22/06/2018
17814741	40A-P10		0.50 - 0.50	22/06/2018
17814785	40A-P10		1.00 - 1.00	22/06/2018
17814831	40A-P10		1.70 - 1.70	22/06/2018
17814874	40A-P10		2.30 - 2.30	22/06/2018
17814745	40A-P11		0.50 - 0.50	22/06/2018
17814749	40A-P11		1.00 - 1.00	22/06/2018
17814753	40A-P11		1.50 - 1.50	22/06/2018
17814757	40A-P11		2.00 - 2.00	22/06/2018
17814878	40A-P10-V		2.60 - 2.60	22/06/2018
17814761	40A-P11-V		2.40 - 2.40	22/06/2018
17814882	40A-R11		0.50 - 0.50	22/06/2018
17814886	40A-R11		1.00 - 1.00	22/06/2018
17814890	40A-R11		1.70 - 1.70	22/06/2018
17814894	40A-R11-V		2.30 - 2.30	22/06/2018

Maximum Sample/Coolbox Temperature (°C) : **17**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			17814817	40A-H10		0.40 - 0.40	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17814822	40A-H10		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17814826	40A-H10		2.00 - 2.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17814835	40A-H10-V		3.30 - 3.30	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17814801	40A-J10		0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17814805	40A-J10		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17814809	40A-J10		1.50 - 1.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 15		X				
				X				
				X				
				X				
				X				
				X				
				X				
				X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 29	X					
			X					
			X					
			X					
			X					
			X					
			X					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 38		X				
				X				
				X				
				X				
				X				
				X				
				X				
Anions by Kone (soil)	All	NDPs: 0 Tests: 15		X				
				X				
				X				
				X				
				X				
				X				
				X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 15	X					
			X					
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8	X					
Calorific Value (S)*	All	NDPs: 0 Tests: 38		X				
				X				
				X				
				X				
				X				
				X				
				X				
CEN Readings	All	NDPs: 0 Tests: 29	X					
			X					
			X					
			X					
			X					
			X					
			X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 67	X	X				
			X	X				
			X	X				
			X	X				
			X	X				
			X	X				
			X	X				
			X	X				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 29	X					
			X					
			X					
			X					
			X					
			X					
			X					
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 29	X					
			X					
			X					
			X					
			X					
			X					
			X					
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 38		X				
				X				
				X				
				X				
				X				
				X				
				X				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 29	X					
			X					
			X					
			X					
			X					
			X					
			X					
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 38		X				
				X				
				X				
				X				
				X				
				X				
				X				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 38			X			
					X			
					X			
					X			
					X			
					X			
					X			

17814849	40A-K13		2.00 - 2.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X				X		X			X		X			
				1kg TUB	S		X						X	X	X	X		X				
17814843	40A-K13		1.00 - 1.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S	X		X	X			X		X			X		X			
				1kg TUB	S		X			X			X	X	X	X		X				
17814839	40A-K13		0.50 - 0.50	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X				X		X			X		X			
				1kg TUB	S		X						X	X	X	X		X				
17814793	40A-K11		2.00 - 2.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S	X		X	X			X		X			X		X			
				1kg TUB	S		X			X	X		X	X	X	X		X				
17814789	40A-K11		1.00 - 1.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X				X		X			X		X			
				1kg TUB	S		X						X	X	X	X		X				
17814781	40A-K11		0.50 - 0.50	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S	X		X	X			X		X			X		X			
				1kg TUB	S		X			X	X		X	X	X	X		X				
17814813	40A-J10-V		2.70 - 2.70	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X				X		X			X		X			
17814809	40A-J10		1.50 - 1.50	60g VOC (ALE215)	S																		X

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17814817			17814822			17814826			17814835			17814801			17814805			17814809	
Customer Sample Reference			40A-H10			40A-H10			40A-H10			40A-H10-V			40A-J10			40A-J10			40A-J10	
AGS Reference																						
Depth (m)			0.40 - 0.40			1.00 - 1.00			2.00 - 2.00			3.30 - 3.30			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
GRO by GC-FID (W)	All	NDPs: 0 Tests: 29	X			X			X					X			X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 29	X			X			X					X			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 38		X			X			X		X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 38		X			X			X		X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 29	X			X			X					X			X			X		
pH	All	NDPs: 0 Tests: 38		X			X			X		X			X			X			X	
pH Value	All	NDPs: 0 Tests: 29	X			X			X					X			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 38		X			X			X		X			X			X			X	
Sample description	All	NDPs: 0 Tests: 38		X			X			X		X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 38		X			X			X		X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 15		X						X								X				
Total Sulphur	All	NDPs: 0 Tests: 15		X						X								X				
TPH CWG (W)	All	NDPs: 0 Tests: 29	X			X			X					X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 38		X			X			X		X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 38			X			X			X		X			X			X			

17814849	40A-K13		2.00 - 2.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X	X		X		X	X	X					X		
				1kg TUB	S	X	X			X		X							X			
17814843	40A-K13		1.00 - 1.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X	X		X		X	X	X	X	X			X		
				1kg TUB	S	X	X			X		X							X			
17814839	40A-K13		0.50 - 0.50	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X	X		X		X	X	X					X		
				1kg TUB	S	X	X			X		X							X			
17814793	40A-K11		2.00 - 2.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X	X		X		X	X	X	X	X			X		
				1kg TUB	S	X	X			X		X							X			
17814789	40A-K11		1.00 - 1.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X	X		X		X	X	X					X		
				1kg TUB	S	X	X			X		X							X			
17814781	40A-K11		0.50 - 0.50	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X	X		X		X	X	X	X	X			X		
				1kg TUB	S	X	X			X		X							X			
17814813	40A-J10-V		2.70 - 2.70	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X	X		X		X	X	X					X		
17814809	40A-J10		1.50 - 1.50	60g VOC (ALE215)	S																		X

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17814853		17814797		17814857		17814861		17814865		17814869		17814765		17814769			
Customer Sample Reference			40A-K15		40A-K11-V		40A-K15-V		40A-L17		40A-L17		40A-L17-V		40A-N11		40A-N11			
AGS Reference																				
Depth (m)			0.50 - 0.50		2.90 - 2.90		0.90 - 0.90		0.70 - 0.70		1.70 - 1.70		3.20 - 3.20		0.50 - 0.50		1.00 - 1.00			
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 15		X								X								
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 29	X							X			X					X		X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 38		X		X		X			X			X		X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 15		X								X								
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 15	X										X							X
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8																		
Calorific Value (S)*	All	NDPs: 0 Tests: 38		X		X		X			X			X		X			X	
CEN Readings	All	NDPs: 0 Tests: 29	X							X			X					X		X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 67	X	X		X		X		X	X		X	X		X		X	X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 29	X							X			X					X		X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 29	X							X			X					X		X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 38		X		X		X			X			X		X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 29	X							X			X					X		X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 38		X		X		X			X			X		X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 38			X		X		X			X			X			X		

| 17814745 | 40A-P11 | | 0.50 - 0.50 | 250g Amber Jar (ALE210) | 1kg TUB | 60g VOC (ALE215)

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
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Lab Sample No(s)			17814853			17814797			17814857			17814861			17814865			17814869			17814765			17814769
Customer Sample Reference			40A-K15			40A-K11-V			40A-K15-V			40A-L17			40A-L17			40A-L17-V			40A-N11			40A-N11
AGS Reference																								
Depth (m)			0.50 - 0.50			2.90 - 2.90			0.90 - 0.90			0.70 - 0.70			1.70 - 1.70			3.20 - 3.20			0.50 - 0.50			1.00 - 1.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
GRO by GC-FID (W)	All	NDPs: 0 Tests: 29	X						X			X						X			X			X
Mercury Dissolved	All	NDPs: 0 Tests: 29	X						X			X						X			X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 38		X		X		X		X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 38		X		X		X		X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 29	X						X			X						X			X			X
pH	All	NDPs: 0 Tests: 38		X		X		X		X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 29	X						X			X						X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 38		X		X		X		X			X			X			X			X		
Sample description	All	NDPs: 0 Tests: 38		X		X		X		X			X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 38		X		X		X		X			X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 15		X												X								
Total Sulphur	All	NDPs: 0 Tests: 15		X												X								
TPH CWG (W)	All	NDPs: 0 Tests: 29	X						X			X						X			X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 38		X		X		X		X			X			X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 38			X		X			X			X			X			X			X		

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
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LE - Land Leachate
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UNL - Unspecified Liquid
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			Lab Sample No(s)	17814745	17814749			17814753			17814757		17814878	17814761		17814882		17814886		
			Customer Sample Reference	40A-P11	40A-P11			40A-P11			40A-P11		40A-P10-V	40A-P11-V		40A-R11		40A-R11		
			AGS Reference																	
			Depth (m)	0.50 - 0.50	1.00 - 1.00			1.50 - 1.50			2.00 - 2.00		2.60 - 2.60	2.40 - 2.40		0.50 - 0.50		1.00 - 1.00		
			Container	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)		1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 15				X					X						X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 29			X		X				X						X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 38				X		X			X		X		X		X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 15				X					X						X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 15			X						X						X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8			X						X						X				
Calorific Value (S)*	All	NDPs: 0 Tests: 38				X		X			X		X		X		X			X	
CEN Readings	All	NDPs: 0 Tests: 29			X		X				X						X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 67			X	X	X	X			X	X		X		X		X	X	X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 29			X		X				X						X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 29			X		X				X						X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 38				X		X			X		X		X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 29			X		X				X						X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 38				X		X			X		X		X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 38	X		X				X			X		X		X			X			X

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
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LE - Land Leachate
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OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
GRO by GC-FID (W)	All	NDPs: 0 Tests: 29	17814745	40A-P11		0.50 - 0.50	60g VOC (ALE215)	S
			17814749	40A-P11		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
			17814753	40A-P11		1.50 - 1.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17814757	40A-P11		2.00 - 2.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17814878	40A-P10-V		2.60 - 2.60	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17814761	40A-P11-V		2.40 - 2.40	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17814882	40A-R11		0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17814886	40A-R11		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
Mercury Dissolved	All	NDPs: 0 Tests: 29						
Metals in solid samples by OES	All	NDPs: 0 Tests: 38						
PAH by GCMS	All	NDPs: 0 Tests: 38						
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 29						
pH	All	NDPs: 0 Tests: 38						
pH Value	All	NDPs: 0 Tests: 29						
Phenols by HPLC (S)	All	NDPs: 0 Tests: 38						
Sample description	All	NDPs: 0 Tests: 38						
Total Organic Carbon	All	NDPs: 0 Tests: 38						
Total Sulphate	All	NDPs: 0 Tests: 15						
Total Sulphur	All	NDPs: 0 Tests: 15						
TPH CWG (W)	All	NDPs: 0 Tests: 29						
TPH CWG GC (S)	All	NDPs: 0 Tests: 38						
VOC MS (S)	All	NDPs: 0 Tests: 38						

| | | |

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17814817	40A-H10	0.40 - 0.40	Dark Brown	Loamy Sand	Brick	None
17814822	40A-H10	1.00 - 1.00	Dark Brown	Loamy Sand	Crushed Brick	Stones
17814826	40A-H10	2.00 - 2.00	Dark Brown	Loamy Sand	Crushed Brick	Stones
17814835	40A-H10-V	3.30 - 3.30	Dark Brown	Sandy Silt Loam	Vegetation	Stones
17814801	40A-J10	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	Vegetation
17814805	40A-J10	1.00 - 1.00	Grey	Sandy Silt Loam	Stones	Vegetation
17814809	40A-J10	1.50 - 1.50	Dark Brown	Loamy Sand	Brick	Stones
17814813	40A-J10-V	2.70 - 2.70	Dark Brown	Silt Loam	Vegetation	None
17814781	40A-K11	0.50 - 0.50	Grey	Silt Loam	Stones	Vegetation
17814789	40A-K11	1.00 - 1.00	Dark Brown	Sandy Loam	Crushed Brick	Stones
17814793	40A-K11	2.00 - 2.00	Dark Brown	Sandy Loam	Crushed Brick	Stones
17814839	40A-K13	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
17814843	40A-K13	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
17814849	40A-K13	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Vegetation
17814853	40A-K15	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
17814797	40A-K11-V	2.90 - 2.90	Dark Brown	Sandy Clay Loam	Crushed Brick	Stones
17814857	40A-K15-V	0.90 - 0.90	Black	Sandy Silt Loam	Vegetation	Stones
17814861	40A-L17	0.70 - 0.70	Dark Brown	Loamy Sand	Stones	Vegetation
17814865	40A-L17	1.70 - 1.70	Dark Brown	Loamy Sand	Stones	Vegetation
17814869	40A-L17-V	3.20 - 3.20	Dark Brown	Sandy Silt Loam	Vegetation	Stones
17814765	40A-N11	0.50 - 0.50	Dark Brown	Loamy Sand	Crushed Brick	Stones
17814769	40A-N11	1.00 - 1.00	Dark Brown	Sand	Stones	Crushed Brick
17814773	40A-N11	1.50 - 1.50	Dark Brown	Sand	Stones	None
17814777	40A-N11-V	2.20 - 2.20	Dark Brown	Silty Clay Loam	Stones	Vegetation
17814741	40A-P10	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
17814785	40A-P10	1.00 - 1.00	Dark Brown	Sand	Stones	None
17814831	40A-P10	1.70 - 1.70	Dark Brown	Loamy Sand	Brick	Stones
17814874	40A-P10	2.30 - 2.30	Dark Brown	Loamy Sand	Brick	Stones
17814745	40A-P11	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
17814749	40A-P11	1.00 - 1.00	Dark Brown	Sand	Stones	Crushed Brick
17814753	40A-P11	1.50 - 1.50	Dark Brown	Sand	Stones	None
17814757	40A-P11	2.00 - 2.00	Dark Brown	Sand	Stones	Crushed Brick
17814878	40A-P10-V	2.60 - 2.60	Dark Brown	Sandy Clay Loam	None	Stones
17814761	40A-P11-V	2.40 - 2.40	Black	Silty Clay Loam	Vegetation	None
17814882	40A-R11	0.50 - 0.50	Dark Brown	Sand	Stones	Crushed Brick
17814886	40A-R11	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	None
17814890	40A-R11	1.70 - 1.70	Dark Brown	Sand	Stones	None
17814894	40A-R11-V	2.30 - 2.30	Black	Silty Clay Loam	Vegetation	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H10	40A-H10	40A-H10	40A-H10-V	40A-J10	40A-J10
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	3.30 - 3.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814817	17814822	17814826	17814835	17814801	17814805
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		2.3	5.6	8.2	62	10	7.9
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	6.31	<0.5	<0.5
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	2.55	<0.5	<0.5
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	5.83	<0.5	<0.5
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	0.98	<0.5	<0.5
Water Analytical M (ad)	<0.5 %	SUB		0.9	2.33	0.71	3.19	0.78	0.96
Water Gross M(ex)	<0.5 %	SUB		5.64	7.21	8.28	58.2	9.41	8.79
Water Total M(ar)	<0.5 %	SUB		6.49	9.38	8.93	59.6	10.1	9.67
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	28.9 M	805 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.308		0.444			0.373
Sulphate, Total potential	<0.06 %	TM132		0.924		1.33			1.12
Soil Organic Matter (SOM)	<0.35 %	TM132		2.55 #	0.683 #	4.69 #	23.4 #	1.93 #	2.78 #
pH	1 pH Units	TM133		10.6 M	11.3 M	9.48 M	6.91 M	8.81 M	9.08 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	7.58 M	8.16 M	14.8 M	8.32 M	5.36 M
Cadmium	<0.02 mg/kg	TM181		5.74 M	0.802 M	0.218 M	0.255 M	0.565 M	0.431 M
Chromium	<0.9 mg/kg	TM181		185 M	268 M	41.1 M	31.6 M	65.4 M	51.3 M
Copper	<1.4 mg/kg	TM181		21.7 M	18.8 M	14.2 M	28.4 M	20.6 M	7.74 M
Iron	<1000 mg/kg	TM181		99800 #	139000 #	30900 #	21600 #	37600 #	34300 #
Lead	<0.7 mg/kg	TM181		58.7 M	27.4 M	11.6 M	27.5 M	32.6 M	23.4 M
Manganese	<0.13 mg/kg	TM181		15900 M	24100 M	4500 M	396 M	8310 M	7540 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		16.8 M	9.45 M	15.3 M	30.4 M	16.6 M	8.07 M
Selenium	<1 mg/kg	TM181		10.5 #	13.8 #	4.01 #	1.71 #	5.31 #	5.16 #
Vanadium	<0.2 mg/kg	TM181		283 #	430 #	83 #	48.1 #	94.3 #	119 #
Zinc	<1.9 mg/kg	TM181		126 M	55.5 M	64.7 M	91.6 M	336 M	101 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.526		0.207			0.0812
Calcium	<21 mg/kg	TM224		136000		149000			157000
Magnesium	<8 mg/kg	TM224		15900		10900			22700

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H10	40A-H10	40A-H10	40A-H10-V	40A-J10	40A-J10
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	3.30 - 3.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814817	17814822	17814826	17814835	17814801	17814805
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.17 M		0.186 M			0.218 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		0.0012 #					<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					<0.001 #
Additional Asbestos Components (Using TM048)		TM304		None #					None #
Analysts Comments		TM304		N/A					N/C
Asbestos Quantification - Total - %	<0.001 %	TM304		0.0012 #					<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-J10	40A-J10-V	40A-K11	40A-K11	40A-K11	40A-K13
			Depth (m)	1.50 - 1.50	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814809	17814813	17814781	17814789	17814793	17814839
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	49	7.8	3.4	3.2	11
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Water Analytical M (ad)	<0.5 %	SUB		0.76	2.69	1.39	1.31	1.21	1.71
Water Gross M(ex)	<0.5 %	SUB		11.7	51.7	9.11	10	8.96	6.14
Water Total M(ar)	<0.5 %	SUB		12.3	53	10.4	11.2	10.1	7.74
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	919 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0826 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0103 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.0207 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.114 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.315		0.244	
Sulphate, Total potential	<0.06 %	TM132				0.945		0.732	
Soil Organic Matter (SOM)	<0.35 %	TM132		2.65 #	12.7 #	1.18 #	2.17 #	1.1 #	1.93 #
pH	1 pH Units	TM133		8.91 M	7.11 M	11.8 M	11.6 M	11.8 M	11.3 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.15 M	12.7 M	7.04 M	7.67 M	8.03 M	6.89 M
Cadmium	<0.02 mg/kg	TM181		0.847 M	0.174 M	0.575 M	0.704 M	1.7 M	2.02 M
Chromium	<0.9 mg/kg	TM181		33.8 M	38.7 M	72.5 M	106 M	141 M	434 M
Copper	<1.4 mg/kg	TM181		16.1 M	26.2 M	14.7 M	19.5 M	25.4 M	36.1 M
Iron	<1000 mg/kg	TM181		35900 #	20100 #	63400 #	69200 #	78600 #	158000 #
Lead	<0.7 mg/kg	TM181		57.6 M	39.1 M	28.2 M	73.4 M	82.4 M	91.5 M
Manganese	<0.13 mg/kg	TM181		4540 M	291 M	12400 M	14200 M	11000 M	37600 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		11.8 M	36 M	9.07 M	12 M	16.7 M	14.1 M
Selenium	<1 mg/kg	TM181		6.03 #	<1 #	5.11 #	6.94 #	<10 #	18.1 #
Vanadium	<0.2 mg/kg	TM181		77.1 #	54.6 #	132 #	127 #	193 #	702 #
Zinc	<1.9 mg/kg	TM181		206 M	123 M	106 M	249 M	283 M	120 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.426		0.0749	
Calcium	<21 mg/kg	TM224				172000		141000	
Magnesium	<8 mg/kg	TM224				32600		17700	

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-J10	40A-J10-V	40A-K11	40A-K11	40A-K11	40A-K13
			Depth (m)	1.50 - 1.50	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814809	17814813	17814781	17814789	17814793	17814839
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.169 M		0.213 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				0.0672 #		0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #		<0.001 #	
Additional Asbestos Components (Using TM048)		TM304				None #		None #	
Analysts Comments		TM304				N/A		N/A	
Asbestos Quantification - Total - %	<0.001 %	TM304				0.0672 #		0.001 #	

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-K13	40A-K13	40A-K15	40A-K11-V	40A-K15-V	40A-L17
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	2.90 - 2.90	0.90 - 0.90	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814843	17814849	17814853	17814797	17814857	17814861
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	13	9.5	9.7	46	14
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	3.64	<0.5
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	1.91	<0.5
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	3.2	<0.5
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	0.59	<0.5
Water Analytical M (ad)	<0.5 %	SUB		1.1	1.31	<0.5	1.97	3.37	1.06
Water Gross M(ex)	<0.5 %	SUB		9.67	12.8	8.44	39.8	45.7	11.3
Water Total M(ar)	<0.5 %	SUB		10.7	13.9	8.44	40.9	47.5	12.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	284 M	398 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0116 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.317		0.283			
Sulphate, Total potential	<0.06 %	TM132		0.951		0.849			
Soil Organic Matter (SOM)	<0.35 %	TM132		3 #	3.4 #	2.74 #	2.93 #	10.7 #	4.43 #
pH	1 pH Units	TM133		11.5 M	11.4 M	8.52 M	6.87 M	7.04 M	11.4 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	3.8 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.02 M	8.06 M	11.4 M	16.6 M	21 M	12.7 M
Cadmium	<0.02 mg/kg	TM181		0.985 M	0.821 M	0.515 M	<0.02 M	0.579 M	1.64 M
Chromium	<0.9 mg/kg	TM181		65.3 M	72 M	73.2 M	39.3 M	37 M	144 M
Copper	<1.4 mg/kg	TM181		24.7 M	18.7 M	16.9 M	23.9 M	28.1 M	25.1 M
Iron	<1000 mg/kg	TM181		83400 #	59000 #	39500 #	32400 #	22400 #	91900 #
Lead	<0.7 mg/kg	TM181		64.7 M	69.6 M	38.4 M	28.3 M	51.3 M	80.7 M
Manganese	<0.13 mg/kg	TM181		17600 M	8990 M	2920 M	249 M	230 M	10700 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		22.3 M	12.9 M	19.4 M	39.1 M	26 M	19 M
Selenium	<1 mg/kg	TM181		7.98 #	4.36 #	1.95 #	<1 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		109 #	125 #	70.9 #	69.6 #	60.5 #	216 #
Zinc	<1.9 mg/kg	TM181		325 M	362 M	129 M	70.3 M	170 M	341 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.0264		0.0266			
Calcium	<21 mg/kg	TM224		139000		73900			
Magnesium	<8 mg/kg	TM224		21000		15700			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-K13	40A-K13	40A-K15	40A-K11-V	40A-K15-V	40A-L17
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	2.90 - 2.90	0.90 - 0.90	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814843	17814849	17814853	17814797	17814857	17814861
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.334 M		0.139 M			

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L17	40A-L17-V	40A-N11	40A-N11	40A-N11	40A-N11-V
			Depth (m)	1.70 - 1.70	3.20 - 3.20	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814865	17814869	17814765	17814769	17814773	17814777
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	45	2.1	8.5	10	29
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		<0.5	3.79	<0.5	<0.5	<0.5	<0.5
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		<0.5	1.87	<0.5	<0.5	<0.5	<0.5
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		<0.5	3.4	<0.5	<0.5	<0.5	<0.5
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		<0.5	0.5	<0.5	<0.5	<0.5	<0.5
Water Analytical M (ad)	<0.5 %	SUB		1.11	3.2	1.02	0.71	0.77	1.68
Water Gross M(ex)	<0.5 %	SUB		10.6	49.2	6.42	9.43	8.64	30.2
Water Total M(ar)	<0.5 %	SUB		11.6	50.8	7.37	10.1	9.34	31.4
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	307 M	<12 M	<12 M	<12 M	70.8 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0113 M	<0.01 M	<0.01 M	<0.01 M	0.0112 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0113 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.256			0.31		
Sulphate, Total potential	<0.06 %	TM132		0.768			0.93		
Soil Organic Matter (SOM)	<0.35 %	TM132		1.45 #	15.6 #	6.02 #	7.81 #	10.7 #	2.07 #
pH	1 pH Units	TM133		11.5 M	6.56 M	10.4 M	10.6 M	10.8 M	7.46 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	6.78 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13.3 M	11.8 M	10.4 M	11.6 M	9.41 M	11.5 M
Cadmium	<0.02 mg/kg	TM181		1.87 M	0.178 M	2.13 M	2.16 M	2.51 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		277 M	32.6 M	34.1 M	117 M	216 M	32.8 M
Copper	<1.4 mg/kg	TM181		34.7 M	24.8 M	38.8 M	32.6 M	29.5 M	22.9 M
Iron	<1000 mg/kg	TM181		130000 #	23300 #	95800 #	104000 #	93600 #	37800 #
Lead	<0.7 mg/kg	TM181		75.7 M	37.9 M	149 M	135 M	102 M	23.5 M
Manganese	<0.13 mg/kg	TM181		21800 M	185 M	3840 M	11700 M	9050 M	465 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		20.5 M	31.5 M	26.3 M	25.1 M	30 M	36.1 M
Selenium	<1 mg/kg	TM181		10.5 #	<1 #	<10 #	<10 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		632 #	49.9 #	58.6 #	359 #	160 #	52.7 #
Zinc	<1.9 mg/kg	TM181		318 M	134 M	614 M	468 M	409 M	90.7 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.38			0.403		
Calcium	<21 mg/kg	TM224		198000			160000		
Magnesium	<8 mg/kg	TM224		15700			13700		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L17	40A-L17-V	40A-N11	40A-N11	40A-N11	40A-N11-V
			Depth (m)	1.70 - 1.70	3.20 - 3.20	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814865	17814869	17814765	17814769	17814773	17814777
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.105 M			0.184 M		

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P10	40A-P10	40A-P10	40A-P10	40A-P11	40A-P11
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814741	17814785	17814831	17814874	17814745	17814749
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.7	9.6	9.2	11	12	9.3
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Water Analytical M (ad)	<0.5 %	SUB		0.56	1.08	1.22	1.14	1.13	1.09
Water Gross M(ex)	<0.5 %	SUB		9.24	8.91	8.99	8.46	9.77	9.61
Water Total M(ar)	<0.5 %	SUB		9.75	9.9	10.1	9.5	10.8	10.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.011 M	<0.01 M	<0.01 M	0.0112 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.0219 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.452		0.266			0.281
Sulphate, Total potential	<0.06 %	TM132		1.36		0.798			0.843
Soil Organic Matter (SOM)	<0.35 %	TM132		5.86 #	3.43 #	3.29 #	2.12 #	3.72 #	3.78 #
pH	1 pH Units	TM133		11 M	11.5 M	11 M	11.3 M	11.4 M	11.3 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	15.7 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.9 M	14.8 M	10.1 M	11.9 M	9.67 M	9.21 M
Cadmium	<0.02 mg/kg	TM181		0.841 M	1.83 M	1.02 M	0.726 M	2.53 M	2.03 M
Chromium	<0.9 mg/kg	TM181		48.1 M	137 M	66.5 M	56.1 M	115 M	71.5 M
Copper	<1.4 mg/kg	TM181		22 M	28.5 M	34 M	29.1 M	36.4 M	24.5 M
Iron	<1000 mg/kg	TM181		53300 #	88500 #	57500 #	89100 #	91100 #	108000 #
Lead	<0.7 mg/kg	TM181		98.1 M	208 M	97.8 M	90.3 M	110 M	150 M
Manganese	<0.13 mg/kg	TM181		6230 M	9120 M	6100 M	5070 M	11000 M	6690 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		16.2 M	19.5 M	16.7 M	16.5 M	26.2 M	18 M
Selenium	<1 mg/kg	TM181		3.28 #	<10 #	3.15 #	2.65 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		80.9 #	162 #	88.4 #	94.7 #	163 #	127 #
Zinc	<1.9 mg/kg	TM181		281 M	296 M	297 M	251 M	467 M	512 M
Sulphate, acid soluble (total)	<0.02 %	TM221		<0.02		<0.02			0.623
Calcium	<21 mg/kg	TM224		116000		163000			141000
Magnesium	<8 mg/kg	TM224		16200		22000			20700

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P10	40A-P10	40A-P10	40A-P10	40A-P11	40A-P11
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814741	17814785	17814831	17814874	17814745	17814749
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.22 M		0.285 M			0.226 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					<0.001 #
Additional Asbestos Components (Using TM048)		TM304		None #					None #
Analysts Comments		TM304		N/A					N/C
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P11	40A-P11	40A-P10-V	40A-P11-V	40A-R11	40A-R11
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.60 - 2.60	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814753	17814757	17814878	17814761	17814882	17814886
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	7.6	32	34	8.2	13
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Water Analytical M (ad)	<0.5 %	SUB		1.12	1.08	1.98	1.52	1.05	0.6
Water Gross M(ex)	<0.5 %	SUB		9.79	9.31	33.9	33	6.72	12.6
Water Total M(ar)	<0.5 %	SUB		10.8	10.3	35.2	34	7.7	13.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	368 M	275 M	<12 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		0.0112 M	0.0433 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.0433 M	<0.035 M	<0.035 M	<0.035 M	<0.035 #
Sulphur, Total	<0.02 %	TM132			0.15			0.4	
Sulphate, Total potential	<0.06 %	TM132			0.45			1.2	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.79 #	1.17 #	5.03 #	5.26 #	2.33 #	1.5 #
pH	1 pH Units	TM133		11.6 M	11.8 M	6.53 M	6.78 M	10.9 M	10.9 #
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	4.34 M	<1 M	<1 M	<1 #
Arsenic	<0.6 mg/kg	TM181		8.34 M	9.62 M	11.5 M	12.6 M	7.81 M	5.9 #
Cadmium	<0.02 mg/kg	TM181		0.23 M	0.51 M	<0.02 M	<0.02 M	0.69 M	0.409 #
Chromium	<0.9 mg/kg	TM181		96.7 M	127 M	33.3 M	37.2 M	57 M	63.6 #
Copper	<1.4 mg/kg	TM181		17.7 M	23.3 M	24.3 M	26.2 M	15.2 M	6.34 #
Iron	<1000 mg/kg	TM181		69000 #	67100 #	30700 #	27600 #	66900 #	21500 #
Lead	<0.7 mg/kg	TM181		38.5 M	49.4 M	25.1 M	30.9 M	58.4 M	20.9 #
Manganese	<0.13 mg/kg	TM181		9660 M	18100 M	280 M	261 M	6750 M	4660 #
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 #
Nickel	<0.2 mg/kg	TM181		11.9 M	17.4 M	31 M	34.6 M	16.2 M	6.99 #
Selenium	<1 mg/kg	TM181		4.03 #	6.25 #	<1 #	<1 #	3.71 #	3.53 #
Vanadium	<0.2 mg/kg	TM181		129 #	102 #	52 #	55.3 #	106 #	137 #
Zinc	<1.9 mg/kg	TM181		191 M	265 M	113 M	115 M	236 M	104 #
Sulphate, acid soluble (total)	<0.02 %	TM221			0.067			0.58	
Calcium	<21 mg/kg	TM224			169000			155000	
Magnesium	<8 mg/kg	TM224			28600			17500	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P11	40A-P11	40A-P10-V	40A-P11-V	40A-R11	40A-R11
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.60 - 2.60	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814753	17814757	17814878	17814761	17814882	17814886
			AGS Reference						
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0908 M				0.194 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		0.0016 #				<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #				<0.001 #	
Additional Asbestos Components (Using TM048)		TM304		None #				None #	
Analysts Comments		TM304		N/A				N/c	
Asbestos Quantification - Total - %	<0.001 %	TM304		0.0016 #				<0.001 #	

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R11	40A-R11-V
			Depth (m)	1.70 - 1.70	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018
			Sample Time	00:00	00:00
			Date Received	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3
			Lab Sample No.(s)	17814890	17814894
			AGS Reference		
Moisture Content Ratio (% of as received sample)	%	PM024		15	37
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		<0.5	<0.5
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		<0.5	<0.5
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		<0.5	<0.5
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		<0.5	<0.5
Water Analytical M (ad)	<0.5 %	SUB		<0.5	1.53
Water Gross M(ex)	<0.5 %	SUB		15.2	37.4
Water Total M(ar)	<0.5 %	SUB		15.2	38.4
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	256 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.197	
Sulphate, Total potential	<0.06 %	TM132		0.591	
Soil Organic Matter (SOM)	<0.35 %	TM132		0.379 #	7.48 #
pH	1 pH Units	TM133		9.98 M	7.4 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.65 M	17.5 M
Cadmium	<0.02 mg/kg	TM181		0.322 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		8.18 M	35.8 M
Copper	<1.4 mg/kg	TM181		5.73 M	24.3 M
Iron	<1000 mg/kg	TM181		19200 #	27200 #
Lead	<0.7 mg/kg	TM181		13.1 M	37.3 M
Manganese	<0.13 mg/kg	TM181		2000 M	299 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		9.06 M	29 M
Selenium	<1 mg/kg	TM181		1.79 #	<1 #
Vanadium	<0.2 mg/kg	TM181		40 #	57.6 #
Zinc	<1.9 mg/kg	TM181		126 M	136 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.886	
Calcium	<21 mg/kg	TM224		83400	
Magnesium	<8 mg/kg	TM224		7980	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R11	40A-R11-V
			Depth (m)	1.70 - 1.70	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018
			Sample Time	00:00	00:00
			Date Received	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3
			Lab Sample No.(s)	17814890	17814894
			AGS Reference		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0992 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H10	40A-H10	40A-H10	40A-H10-V	40A-J10	40A-J10
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	3.30 - 3.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814817	17814822	17814826	17814835	17814801	17814805
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.9	93	90.6	94	80.8	89.9
Acenaphthene-d10 % recovery**	%	TM218		86.7	84.8	97	94.2	84.4	97.6
Phenanthrene-d10 % recovery**	%	TM218		96.6	96.1	97.6	96	94.5	115
Chrysene-d12 % recovery**	%	TM218		82.5	90.4	80.9	85	78.2	99
Perylene-d12 % recovery**	%	TM218		86.2	89.9	78.4	88	78.6	96.1
Naphthalene	<0.009 mg/kg	TM218		0.0408 M	0.0149 M	0.0838 M	<0.009 M	0.0214 M	0.023 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0472 M	0.00944 M	0.0121 M	<0.008 M	0.0119 M	0.00875 M
Fluorene	<0.01 mg/kg	TM218		0.0151 M	<0.01 M	0.0197 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.612 M	0.14 M	0.301 M	<0.015 M	0.143 M	0.112 M
Anthracene	<0.016 mg/kg	TM218		0.166 M	0.0326 M	0.0452 M	<0.016 M	0.0326 M	0.0233 M
Fluoranthene	<0.017 mg/kg	TM218		2.08 M	0.575 M	0.324 M	<0.017 M	0.37 M	0.231 M
Pyrene	<0.015 mg/kg	TM218		2.27 M	0.611 M	0.275 M	<0.015 M	0.36 M	0.245 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.53 M	0.428 M	0.133 M	<0.014 M	0.253 M	0.169 M
Chrysene	<0.01 mg/kg	TM218		1.46 M	0.475 M	0.163 M	0.0267 M	0.233 M	0.187 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.67 M	0.747 M	0.262 M	0.0391 M	0.494 M	0.393 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.06 M	0.302 M	0.0801 M	<0.014 M	0.154 M	0.134 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		2.09 M	0.551 M	0.159 M	<0.015 M	0.285 M	0.252 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.62 M	0.441 M	0.16 M	<0.018 M	0.224 M	0.253 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.357 M	0.0865 M	<0.023 M	<0.023 M	0.0586 M	0.0491 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.95 M	0.501 M	0.141 M	<0.024 M	0.315 M	0.286 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		18	4.92	2.16	<0.118	2.96	2.37

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-J10	40A-J10-V	40A-K11	40A-K11	40A-K11	40A-K13
			Depth (m)	1.50 - 1.50	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814809	17814813	17814781	17814789	17814793	17814839
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.8	104	83.3	93.4	86	88.1
Acenaphthene-d10 % recovery**	%	TM218		83.9	102	85.7	101	92.5	96.2
Phenanthrene-d10 % recovery**	%	TM218		94.9	99.5	99.5	115	104	103
Chrysene-d12 % recovery**	%	TM218		80.4	97	82.1	97.5	87	71.8
Perylene-d12 % recovery**	%	TM218		79.2	93.2	85.4	100	92.1	73.3
Naphthalene	<0.009 mg/kg	TM218		0.051 M	0.0247 M	0.0416 M	0.0251 M	0.0414 M	0.0226 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	0.0213 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0128 M	0.0542 M	0.00894 M	0.0092 M	0.0468 M	0.071 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0953 M	<0.01 M	0.0154 M	0.0356 M	0.0242 M
Phenanthrene	<0.015 mg/kg	TM218		0.171 M	0.729 M	0.332 M	0.283 M	0.906 M	0.593 M
Anthracene	<0.016 mg/kg	TM218		0.0369 M	0.105 M	0.0764 M	0.131 M	0.166 M	0.653 M
Fluoranthene	<0.017 mg/kg	TM218		0.36 M	0.381 M	0.776 M	0.723 M	1.09 M	1.99 M
Pyrene	<0.015 mg/kg	TM218		0.371 M	0.256 M	0.752 M	0.626 M	0.914 M	5 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.248 M	0.0779 M	0.301 M	0.379 M	0.396 M	1.42 M
Chrysene	<0.01 mg/kg	TM218		0.253 M	0.163 M	0.284 M	0.332 M	0.331 M	1.45 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.498 M	0.226 M	0.341 M	0.416 M	0.467 M	1.96 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.16 M	0.0685 M	0.135 M	0.135 M	0.157 M	0.803 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.327 M	0.107 M	0.207 M	0.259 M	0.323 M	1.27 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.217 M	0.103 M	0.157 M	0.155 M	0.197 M	0.957 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0642 M	<0.023 M	0.0437 M	0.0521 M	0.0527 M	0.198 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.313 M	0.129 M	0.189 M	0.193 M	0.239 M	1.2 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.08	2.52	3.64	3.76	5.36	17.6

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-K13	40A-K13	40A-K15	40A-K11-V	40A-K15-V	40A-L17
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	2.90 - 2.90	0.90 - 0.90	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814843	17814849	17814853	17814797	17814857	17814861
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.7	87.2	88.9	95.2	101	78.5
Acenaphthene-d10 % recovery**	%	TM218		93.5	93.1	96.6	91	105	75.6
Phenanthrene-d10 % recovery**	%	TM218		103	102	107	89.5	108	91.7
Chrysene-d12 % recovery**	%	TM218		88.7	91.7	81.1	85.5	87.4	76.1
Perylene-d12 % recovery**	%	TM218		89	86.9	81.2	85.2	88.9	77.3
Naphthalene	<0.009 mg/kg	TM218		0.0711 M	0.134 M	0.0286 M	<0.009 M	<0.009 M	0.827 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0199 M	<0.024 M	<0.012 M	<0.012 M	<0.012 M	0.125 M
Acenaphthene	<0.008 mg/kg	TM218		0.0553 M	0.189 M	0.0276 M	<0.008 M	<0.008 M	0.0423 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0967 M	0.0179 M	<0.01 M	<0.01 M	0.142 M
Phenanthrene	<0.015 mg/kg	TM218		0.802 M	0.806 M	0.127 M	<0.015 M	0.0635 M	0.893 M
Anthracene	<0.016 mg/kg	TM218		0.155 M	0.183 M	0.0516 M	<0.016 M	<0.016 M	0.284 M
Fluoranthene	<0.017 mg/kg	TM218		1.21 M	1.06 M	0.311 M	<0.017 M	0.121 M	1.48 M
Pyrene	<0.015 mg/kg	TM218		1.2 M	1 M	0.293 M	<0.015 M	0.0944 M	1.14 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.577 M	0.445 M	0.137 M	<0.014 M	0.0404 M	0.576 M
Chrysene	<0.01 mg/kg	TM218		0.557 M	0.445 M	0.124 M	<0.01 M	0.0662 M	0.499 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.902 M	0.615 M	0.196 M	<0.015 M	0.0923 M	0.601 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.343 M	0.229 M	0.0593 M	<0.014 M	0.0384 M	0.248 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.546 M	0.383 M	0.106 M	<0.015 M	0.0441 M	0.49 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.472 M	0.275 M	0.0785 M	<0.018 M	0.04 M	0.339 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0961 M	0.075 M	0.0286 M	<0.023 M	<0.023 M	0.098 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.546 M	0.376 M	0.0862 M	<0.024 M	0.0458 M	0.402 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		7.55	6.31	1.67	<0.118	0.646	8.19

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L17	40A-L17-V	40A-N11	40A-N11	40A-N11	40A-N11-V
			Depth (m)	1.70 - 1.70	3.20 - 3.20	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814865	17814869	17814765	17814769	17814773	17814777
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		73.3	88.5	95.2	99.4	95.8	91.1
Acenaphthene-d10 % recovery**	%	TM218		85.9	89.1	94.3	100	97.9	89.4
Phenanthrene-d10 % recovery**	%	TM218		95.3	89.5	101	95.8	96.4	90
Chrysene-d12 % recovery**	%	TM218		76.9	88.6	87.2	84.9	85.3	86.6
Perylene-d12 % recovery**	%	TM218		79.3	88.4	82.2	80.4	84.2	88.1
Naphthalene	<0.009 mg/kg	TM218		38.1 M	<0.009 M	0.0653 M	0.0781 M	0.129 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		1.62 M	<0.012 M	0.0176 M	0.0138 M	0.0174 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.192 M	<0.008 M	0.0145 M	0.013 M	0.0261 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		2.67 M	<0.01 M	0.0179 M	0.0111 M	0.0304 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		11.6 M	0.0307 M	0.196 M	0.196 M	0.302 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		2.97 M	<0.016 M	0.0551 M	0.0436 M	0.0768 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		9.94 M	0.0699 M	0.335 M	0.32 M	0.532 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		6.32 M	0.0524 M	0.327 M	0.329 M	0.494 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		3.39 M	<0.014 M	0.216 M	0.19 M	0.332 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		2.22 M	0.044 M	0.232 M	0.197 M	0.325 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		3.8 M	0.0614 M	0.358 M	0.347 M	0.576 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.21 M	<0.014 M	0.14 M	0.105 M	0.183 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		2.6 M	<0.015 M	0.255 M	0.202 M	0.365 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.71 M	0.0345 M	0.207 M	0.194 M	0.304 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.469 M	<0.023 M	0.0512 M	<0.023 M	0.0595 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.85 M	<0.024 M	0.234 M	0.177 M	0.286 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		90.7	0.293	2.72	2.42	4.04	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P10	40A-P10	40A-P10	40A-P10	40A-P11	40A-P11
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814741	17814785	17814831	17814874	17814745	17814749
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		96.7	93.7	86.7	89.2	95.1	98.8
Acenaphthene-d10 % recovery**	%	TM218		96.6	105	91.6	99.2	97.8	101
Phenanthrene-d10 % recovery**	%	TM218		97	116	105	108	97.8	100
Chrysene-d12 % recovery**	%	TM218		89.3	101	83.7	86.4	88.9	93.6
Perylene-d12 % recovery**	%	TM218		91.5	101	85.9	89.3	88.2	92.6
Naphthalene	<0.009 mg/kg	TM218		0.0665 M	0.107 M	0.113 M	0.105 M	0.107 M	0.0771 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0179 M	0.0247 M	0.0379 M	0.0181 M	0.183 M	0.026 M
Acenaphthene	<0.008 mg/kg	TM218		0.0607 M	0.0571 M	0.0438 M	0.0512 M	0.05 M	0.0266 M
Fluorene	<0.01 mg/kg	TM218		0.0551 M	0.045 M	0.0459 M	0.0389 M	0.0472 M	0.0186 M
Phenanthrene	<0.015 mg/kg	TM218		0.607 M	0.574 M	0.54 M	0.498 M	0.609 M	0.295 M
Anthracene	<0.016 mg/kg	TM218		0.188 M	0.13 M	0.158 M	0.111 M	0.205 M	0.093 M
Fluoranthene	<0.017 mg/kg	TM218		1.11 M	0.812 M	1.12 M	0.658 M	1.63 M	0.672 M
Pyrene	<0.015 mg/kg	TM218		1.16 M	1.06 M	1.69 M	0.997 M	2.17 M	1.32 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.65 M	0.492 M	0.867 M	0.378 M	1.45 M	0.563 M
Chrysene	<0.01 mg/kg	TM218		0.612 M	0.572 M	0.79 M	0.371 M	1.41 M	0.58 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.08 M	0.738 M	1.3 M	0.536 M	2.41 M	0.706 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.335 M	0.235 M	0.411 M	0.165 M	0.766 M	0.266 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.739 M	0.425 M	0.769 M	0.308 M	1.75 M	0.435 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.648 M	0.348 M	0.501 M	0.204 M	1.32 M	0.416 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.107 M	0.0808 M	0.163 M	0.061 M	0.223 M	0.0684 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.63 M	0.342 M	0.676 M	0.262 M	1.21 M	0.355 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		8.06	6.05	9.23	4.76	15.5	5.91

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P11	40A-P11	40A-P10-V	40A-P11-V	40A-R11	40A-R11
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.60 - 2.60	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814753	17814757	17814878	17814761	17814882	17814886
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.5	93.1	93.7	92.4	93.1	89.7
Acenaphthene-d10 % recovery**	%	TM218		95.4	101	91.1	87.2	102	101
Phenanthrene-d10 % recovery**	%	TM218		96.6	103	91.4	88.1	121	111
Chrysene-d12 % recovery**	%	TM218		91.6	83.8	91.6	86.4	99.7	101
Perylene-d12 % recovery**	%	TM218		90.6	82.6	90.8	85.9	95.7	103
Naphthalene	<0.009 mg/kg	TM218		0.0867 M	0.074 M	<0.009 M	<0.009 M	0.0636 M	0.0334 #
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	0.0224 M	<0.012 #
Acenaphthene	<0.008 mg/kg	TM218		0.0804 M	0.0543 M	<0.008 M	<0.008 M	0.0195 M	0.0136 #
Fluorene	<0.01 mg/kg	TM218		0.142 M	0.027 M	<0.01 M	<0.01 M	0.0225 M	0.0148 #
Phenanthrene	<0.015 mg/kg	TM218		2.31 M	0.47 M	<0.015 M	<0.015 M	0.238 M	0.0894 #
Anthracene	<0.016 mg/kg	TM218		0.654 M	0.0897 M	<0.016 M	<0.016 M	0.0703 M	0.0334 #
Fluoranthene	<0.017 mg/kg	TM218		3.03 M	0.549 M	<0.017 M	<0.017 M	0.616 M	0.141 #
Pyrene	<0.015 mg/kg	TM218		2.37 M	0.503 M	<0.015 M	<0.015 M	0.874 M	0.152 #
Benz(a)anthracene	<0.014 mg/kg	TM218		1.16 M	0.206 M	<0.014 M	<0.014 M	0.471 M	0.0738 #
Chrysene	<0.01 mg/kg	TM218		1.08 M	0.216 M	<0.01 M	<0.01 M	0.458 M	0.0874 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.939 M	0.228 M	<0.015 M	<0.015 M	0.614 M	0.12 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.395 M	0.1 M	<0.014 M	<0.014 M	0.222 M	0.0362 #
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.736 M	0.165 M	<0.015 M	<0.015 M	0.421 M	0.0631 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.57 M	0.15 M	<0.018 M	<0.018 M	0.326 M	0.0535 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.117 M	<0.023 M	<0.023 M	<0.023 M	0.0817 M	<0.023 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.457 M	0.127 M	<0.024 M	<0.024 M	0.36 M	0.0618 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		14.1	2.96	<0.118	<0.118	4.88	0.973

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R11	40A-R11-V				
			Depth (m)	1.70 - 1.70	2.30 - 2.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	22/06/2018	22/06/2018				
			Sample Time	00:00	00:00				
			Date Received	26/06/2018	26/06/2018				
			SDG Ref	180626-3	180626-3				
			Lab Sample No.(s)	17814890	17814894				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		98.7	84.2				
Acenaphthene-d10 % recovery**	%	TM218		100	81				
Phenanthrene-d10 % recovery**	%	TM218		101	84.4				
Chrysene-d12 % recovery**	%	TM218		97.1	84.9				
Perylene-d12 % recovery**	%	TM218		100	83.6				
Naphthalene	<0.009 mg/kg	TM218		0.0107 M	<0.009 M				
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M				
Acenaphthene	<0.008 mg/kg	TM218		0.013 M	<0.008 M				
Fluorene	<0.01 mg/kg	TM218		0.0163 M	<0.01 M				
Phenanthrene	<0.015 mg/kg	TM218		0.0575 M	<0.015 M				
Anthracene	<0.016 mg/kg	TM218		0.0231 M	<0.016 M				
Fluoranthene	<0.017 mg/kg	TM218		0.0585 M	0.0332 M				
Pyrene	<0.015 mg/kg	TM218		0.0592 M	<0.015 M				
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0219 M	<0.014 M				
Chrysene	<0.01 mg/kg	TM218		0.024 M	0.0227 M				
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0278 M	0.0311 M				
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M				
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M				
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M				
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M				
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.312	<0.118				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H10	40A-H10	40A-H10	40A-H10-V	40A-J10	40A-J10
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	3.30 - 3.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814817	17814822	17814826	17814835	17814801	17814805
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		84	96	57	80	91	113
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	1.7	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0416	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	0.325	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.66	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.364	0.307	0.102	1.99	<0.1	2.36
Aliphatics >C16-C21	<0.1 mg/kg	TM173		6.04	1.75	0.894	4.54	2.67	13
Aliphatics >C21-C35	<0.1 mg/kg	TM173		49.4	16.4	9.39	58.7	19.5	35.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		24.2	6.86	5.91	1.18	4.46	6.2
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		80	25.3	16.3	66.4	26.6	56.9
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.217	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.44	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	0.208	1.97	0.542	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.67	2.9	1.87	7.84	3.33	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		89.3	31.7	16	225	30.8	3.73
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		31	13.1	12.8	33.8	16.5	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		10.1	4.79	5.77	9.55	6.17	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		124	47.7	30.9	268	51.2	3.73
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		204	74.6	47.2	335	77.8	60.6

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-J10	40A-J10-V	40A-K11	40A-K11	40A-K11	40A-K13
			Depth (m)	1.50 - 1.50	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814809	17814813	17814781	17814789	17814793	17814839
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		66	113	76	88	73	69
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	0.25	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	0.0584	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	0.0917	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0857	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.45	4.47	4.79	3.9	13.5	8.2
Aliphatics >C16-C21	<0.1 mg/kg	TM173		8.73	4.91	19.7	11.9	31.5	51.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		44.1	20.9	116	71.4	114	1000
Aliphatics >C35-C44	<0.1 mg/kg	TM173		15.6	<0.1	39.2	21.4	40.5	948
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		70.9	30.3	180	109	199	2010
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.0605	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0578	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.08	9.01	<0.1	0.738	4.06	2.92
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		5.23	13.4	2.1	4.35	15.9	22.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		42.5	74.4	17.3	30.3	59.7	245
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		24.9	16.7	4.22	18.2	39.5	261
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		9.82	4.59	1.13	7.69	17.3	129
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		73.7	113	23.6	53.6	119	532
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		145	144	204	162	318	2540

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-K13	40A-K13	40A-K15	40A-K11-V	40A-K15-V	40A-L17
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	2.90 - 2.90	0.90 - 0.90	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814843	17814849	17814853	17814797	17814857	17814861
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		77	72	89	82	77	73
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		23.1	16.7	1.82	<0.1	<0.1	3.89
Aliphatics >C16-C21	<0.1 mg/kg	TM173		59.2	45	5.6	<0.1	<0.1	9.81
Aliphatics >C21-C35	<0.1 mg/kg	TM173		239	218	22.8	2.55	8.39	34.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		94.5	108	5.58	<0.1	<0.1	12.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		416	388	35.7	2.55	8.39	60.2
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		31.7	6.45	0.683	<0.1	0.524	2.15
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	26.3	3.39	<0.1	3.59	10
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		147	181	17.2	8.5	82.1	38.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		101	145	7.63	1.23	13	18.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		41.8	60.8	2.9	<0.1	3.95	7.41
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		280	359	28.9	9.72	99.2	68.7
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		696	746	64.7	12.3	108	129

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L17	40A-L17-V	40A-N11	40A-N11	40A-N11	40A-N11-V
			Depth (m)	1.70 - 1.70	3.20 - 3.20	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814865	17814869	17814765	17814769	17814773	17814777
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		73	69	74	78	69	101
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		8.17	0.213	6.17	3.19	2.89	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		19.8	1.24	28.2	15	13.9	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		62.1	16.7	104	71.6	74.9	1.49
Aliphatics >C35-C44	<0.1 mg/kg	TM173		18.3	0.469	24.8	19.7	23.6	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		108	18.6	163	109	115	1.49
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.85	0.204	1.64	1.16	2.16	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		14.6	2.77	9.9	8.46	9.71	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		59.5	97	50	47.4	53.9	8.52
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		28.3	19.4	22.2	26.2	30	3.11
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		10.9	3.35	8.8	10.6	11.8	1.13
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		106	119	83.7	83.3	95.8	11.6
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		215	138	246	193	211	13.1

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P10	40A-P10	40A-P10	40A-P10	40A-P11	40A-P11
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814741	17814785	17814831	17814874	17814745	17814749
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		80	72	76	81	71	74 2
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		0.198	<0.176	<0.176	0.776	<0.176	<0.044 2
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.01 2
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0459	<0.04	<0.01 2
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0885	<0.04	<0.01 2
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0613	<0.04	<0.04	0.327	<0.04	<0.01 2
Aliphatics >C12-C16	<0.1 mg/kg	TM173		12	11.5	10.2	21.7	4.96	4.44
Aliphatics >C16-C21	<0.1 mg/kg	TM173		23.5	32.5	31.1	50.1	18.7	17.4
Aliphatics >C21-C35	<0.1 mg/kg	TM173		105	134	139	131	91.1	102
Aliphatics >C35-C44	<0.1 mg/kg	TM173		41.1	32.2	39	28.7	25.1	29.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		181	210	219	232	140	154
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.01 2
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.01 2
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.065	<0.04	<0.01 2
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0405	<0.04	<0.04	0.218	<0.04	<0.01 2
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		4.1	3.47	0.298	30	1.46	1.95
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		13.8	15.1	8.93	<0.1	9.34	11.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		78.6	65.5	74.4	86	49.4	58.4
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		52.5	35.6	31.9	31.4	23	29.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		21.6	15.1	11.9	13	9.28	11.9
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		149	120	116	147	83.2	101
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		330	330	335	380	223	255

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P11	40A-P11	40A-P10-V	40A-P11-V	40A-R11	40A-R11
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.60 - 2.60	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814753	17814757	17814878	17814761	17814882	17814886
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		64	73	96	111	67	99
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	0.281	<0.176	<0.176	<0.044	2.38
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	0.0433	<0.04	<0.04	<0.01	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	0.0682	<0.04	<0.04	<0.01	0.217
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0515	0.0573	<0.04	<0.04	<0.01	1.19
Aliphatics >C12-C16	<0.1 mg/kg	TM173		4.91	4.81	<0.1	<0.1	2.39	28.6
Aliphatics >C16-C21	<0.1 mg/kg	TM173		18.8	17.5	<0.1	<0.1	18.9	48.8
Aliphatics >C21-C35	<0.1 mg/kg	TM173		93	82.1	11	7.04	111	74.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		23.9	23.9	<0.1	<0.1	36	26.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		141	128	11	7.04	168	179
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.0509	<0.04	<0.04	<0.01	0.145
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.01	0.79
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.49	1.6	<0.1	<0.1	<0.1	9.08
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		10.4	7.6	<0.1	0.555	0.45	20.3
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		43.3	33.5	41.4	29.2	8.04	45.4
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		22.8	22.7	10.6	8.8	1.37	24.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		9.58	10.2	3.52	3.31	1.06	9.9
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		79	65.5	52.1	38.5	9.87	99.6
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		220	194	63.1	45.6	178	281

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R11	40A-R11-V				
			Depth (m)	1.70 - 1.70	2.30 - 2.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	22/06/2018	22/06/2018				
			Sample Time	00:00	00:00				
			Date Received	26/06/2018	26/06/2018				
			SDG Ref	180626-3	180626-3				
			Lab Sample No.(s)	17814890	17814894				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		86	87				
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		0.73	<0.176				
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04				
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04				
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0749	<0.04				
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.339	<0.04				
Aliphatics >C12-C16	<0.1 mg/kg	TM173		7.37	<0.1				
Aliphatics >C16-C21	<0.1 mg/kg	TM173		23.8	<0.1				
Aliphatics >C21-C35	<0.1 mg/kg	TM173		31.7	3.18				
Aliphatics >C35-C44	<0.1 mg/kg	TM173		10.9	<0.1				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		73.7	3.18				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0491	<0.04				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.226	<0.04				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.77	0.114				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		8.69	1.2				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		22.9	54.8				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		14.6	17.2				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		5.82	7.35				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		48	73.2				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		122	76.4				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H10	40A-H10	40A-H10	40A-H10-V	40A-J10	40A-J10
			Depth (m)	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	3.30 - 3.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814817	17814822	17814826	17814835	17814801	17814805
			AGS Reference						
Dibromofluoromethane**	%	TM116		111	111	110	111	108	111
Toluene-d8**	%	TM116		98.7	97.9	98.2	96.1	98.2	98.1
4-Bromofluorobenzene**	%	TM116		90.6	92.3	86.1	90.1	88.9	88.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-J10	40A-J10-V	40A-K11	40A-K11	40A-K11	40A-K13
			Depth (m)	1.50 - 1.50	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814809	17814813	17814781	17814789	17814793	17814839
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	110	107	108	107	114
Toluene-d8**	%	TM116		99.2	98.7	98.4	97	97.2	92
4-Bromofluorobenzene**	%	TM116		94	99.3	94.8	90.2	93.9	80
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-K13	40A-K13	40A-K15	40A-K11-V	40A-K15-V	40A-L17
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	2.90 - 2.90	0.90 - 0.90	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814843	17814849	17814853	17814797	17814857	17814861
			AGS Reference						
Dibromofluoromethane**	%	TM116		111	110	107	103	109	110
Toluene-d8**	%	TM116		98.1	98.5	98.2	98.8	98.6	97.6
4-Bromofluorobenzene**	%	TM116		88.5	87.7	88.1	103	99.7	86.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	0.56 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-L17	40A-L17-V	40A-N11	40A-N11	40A-N11	40A-N11-V
			Depth (m)	1.70 - 1.70	3.20 - 3.20	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814865	17814869	17814765	17814769	17814773	17814777
			AGS Reference						
Dibromofluoromethane**	%	TM116		103	105	109	114	105	108
Toluene-d8**	%	TM116		96.4	97.2	97.6	99	97.7	97.9
4-Bromofluorobenzene**	%	TM116		87.9	94.6	86.1	88	86.1	91.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.15 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P10	40A-P10	40A-P10	40A-P10	40A-P11	40A-P11
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814741	17814785	17814831	17814874	17814745	17814749
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	106	107	111	109	101 2
Toluene-d8**	%	TM116		96.7	97.2	98.3	95.6	98.4	88.2 2
4-Bromofluorobenzene**	%	TM116		88.1	89.7	90.4	85	95.5	70.1 2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 2 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 2 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 2 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 2 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 2 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 2 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 2 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4 2

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-P11	40A-P11	40A-P10-V	40A-P11-V	40A-R11	40A-R11
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.60 - 2.60	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
			SDG Ref	180626-3	180626-3	180626-3	180626-3	180626-3	180626-3
			Lab Sample No.(s)	17814753	17814757	17814878	17814761	17814882	17814886
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	108	108	112	109	112
Toluene-d8**	%	TM116		99.4	100	96	98.7	98.1	99.2
4-Bromofluorobenzene**	%	TM116		98.2	95.7	87.3	105	93.9	93.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 #
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 #
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 #
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 #
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-R11	40A-R11-V				
			Depth (m)	1.70 - 1.70	2.30 - 2.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	22/06/2018	22/06/2018				
			Sample Time	00:00	00:00				
			Date Received	26/06/2018	26/06/2018				
			SDG Ref	180626-3	180626-3				
			Lab Sample No.(s)	17814890	17814894				
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	110				
Toluene-d8**	%	TM116		99.6	99.1				
4-Bromofluorobenzene**	%	TM116		99.7	102				
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M				
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M				
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M				
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #				
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M				
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4				

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-H10 0.40 - 0.40 SOLID 22/06/2018 00:00:00 26/06/2018 10:39:59 180626-3 17814817 TM048	02/07/2018	Lucy Caroe	Soil containing material typical of AIB	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-H10 2.00 - 2.00 SOLID 22/06/2018 00:00:00 26/06/2018 15:51:57 180626-3 17814826 TM048	29/06/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-J10 1.00 - 1.00 SOLID 22/06/2018 00:00:00 26/06/2018 13:34:04 180626-3 17814805 TM048	02/07/2018	Marcin Magdziarek	Loose fibre in soil	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-K11 0.50 - 0.50 SOLID 22/06/2018 00:00:00 26/06/2018 14:44:57 180626-3 17814781 TM048		Lucy Caroe	Soil containing material typical of asbestos rope	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-K11 2.00 - 2.00 SOLID 22/06/2018 00:00:00 26/06/2018 14:47:28 180626-3 17814793 TM048	02/07/2018	Marcin Magdziarek	Soil containing material typical of asbestos cement	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-K13 1.00 - 1.00 SOLID 22/06/2018 00:00:00 26/06/2018 10:32:11 180626-3 17814843 TM048	02/07/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180626-3 **Client Reference:** **Report Number:** 464218
Location: Llanwern **Order Number:** LLA451 **Superseded Report:** 464016

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-K15 0.50 - 0.50 SOLID 22/06/2018 00:00:00 26/06/2018 13:23:15 180626-3 17814853 TM048	02/07/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-L17 1.70 - 1.70 SOLID 22/06/2018 00:00:00 26/06/2018 13:27:21 180626-3 17814865 TM048	02/07/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-N11 1.00 - 1.00 SOLID 22/06/2018 00:00:00 26/06/2018 19:55:41 180626-3 17814769 TM048	02/07/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-P10 0.50 - 0.50 SOLID 22/06/2018 00:00:00 26/06/2018 14:03:27 180626-3 17814741 TM048	02/07/2018	James Richards	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-P10 1.70 - 1.70 SOLID 22/06/2018 00:00:00 26/06/2018 14:00:17 180626-3 17814831 TM048	02/07/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-P11 1.00 - 1.00 SOLID 22/06/2018 00:00:00 26/06/2018 13:33:43 180626-3 17814749 TM048	29/06/2018	Lucy Caroe	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180626-3 **Client Reference:** **Report Number:** 464218
Location: Llanwern **Order Number:** LLA451 **Superseded Report:** 464016

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-P11 2.00 - 2.00 SOLID 22/06/2018 00:00:00 26/06/2018 17:05:51 180626-3 17814757 TM048	02/07/2018	Marcin Magdziarek	Loose fibre in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-R11 0.50 - 0.50 SOLID 22/06/2018 00:00:00 26/06/2018 14:31:02 180626-3 17814882 TM048	29/06/2018	Lucy Caroe	Fibre bundles in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-R11 1.70 - 1.70 SOLID 22/06/2018 00:00:00 26/06/2018 14:27:42 180626-3 17814890 TM048	29/06/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-H10 0.40 - 0.40 SOLID 22/06/2018 00:00:00 26/06/2018 10:41:50 180626-3 17814817 TM304	None (#)	N/A	0.0012 (#)	<0.001 (#)	0.0012 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-J10 1.00 - 1.00 SOLID 22/06/2018 00:00:00 26/06/2018 13:36:39 180626-3 17814805 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-K11 0.50 - 0.50 SOLID 22/06/2018 00:00:00 26/06/2018 14:45:29 180626-3 17814781 TM304	None (#)	N/A	0.0672 (#)	<0.001 (#)	0.0672 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-K11 2.00 - 2.00 SOLID 22/06/2018 00:00:00 26/06/2018 14:48:02 180626-3 17814793 TM304	None (#)	N/A	0.0010 (#)	<0.001 (#)	0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-P10 0.50 - 0.50 SOLID 22/06/2018 00:00:00 26/06/2018 14:05:27 180626-3 17814741 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-P11 1.00 - 1.00 SOLID 22/06/2018 00:00:00 26/06/2018 13:34:42 180626-3 17814749 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-P11 2.00 - 2.00 SOLID 22/06/2018 00:00:00 26/06/2018 17:05:28 180626-3 17814757 TM304	None (#)	N/A	0.0016 (#)	<0.001 (#)	0.0016 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-R11 0.50 - 0.50 SOLID 22/06/2018 00:00:00 26/06/2018 14:31:46 180626-3 17814882 TM304	None (#)	N/c	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814741
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P10
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.34	<0.2	3.4	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0033	<0.0005	0.033	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00101	<0.001	0.0101	<0.01	-	-	-
Copper	0.0102	<0.0003	0.102	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00206	<0.0004	0.0206	<0.004	-	-	-
Selenium	0.00413	<0.001	0.0413	<0.01	-	-	-
Vanadium	0.113	<0.001	1.13	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000065	<0.00001	0.00065	<0.0001	-	-	-
Acenaphthene by GCMS	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Anthracene by GCMS	0.0000231	<0.000005	0.000231	<0.00005	-	-	-
Phenanthrene by GCMS	0.00017	<0.000005	0.0017	<0.00005	-	-	-
Fluorene by GCMS	0.0000366	<0.000005	0.000366	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00016	<0.000005	0.0016	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000173	<0.000005	0.000173	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000535	<0.000005	0.0000535	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000917	<0.000002	0.0000917	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000599	<0.000005	0.0000599	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000725	<0.000082	0.00725	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	395.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814741
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P10
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.012	<0.01	0.12	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.012	<0.01	0.12	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.012	<0.01	0.12	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	395.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84.8
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814745
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P11
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00153	<0.0005	0.0153	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00166	<0.001	0.0166	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000774	<0.0004	0.00774	<0.004	-	-	-
Selenium	0.00158	<0.001	0.0158	<0.01	-	-	-
Vanadium	0.0471	<0.001	0.471	<0.01	-	-	-
Zinc	0.00603	<0.001	0.0603	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000668	<0.00001	0.000668	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000468	<0.000005	0.000468	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000134	<0.000005	0.00134	<0.00005	-	-	-
Anthracene by GCMS	0.0000195	<0.000005	0.000195	<0.00005	-	-	-
Phenanthrene by GCMS	0.00017	<0.000005	0.0017	<0.00005	-	-	-
Fluorene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Chrysene by GCMS	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Pyrene by GCMS	0.000277	<0.000005	0.00277	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000769	<0.000082	0.00769	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.07
Conductivity (µS/cm)	480.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84.8
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814745
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P11
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.07
Conductivity (µS/cm)	480.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814749
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P11
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00185	<0.0005	0.0185	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00122	<0.001	0.0122	<0.01	-	-	-
Copper	0.00179	<0.0003	0.0179	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000778	<0.0004	0.00778	<0.004	-	-	-
Selenium	0.00167	<0.001	0.0167	<0.01	-	-	-
Vanadium	0.0503	<0.001	0.503	<0.01	-	-	-
Zinc	0.00239	<0.001	0.0239	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000663	<0.00001	0.000663	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000407	<0.000005	0.000407	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000261	<0.000005	0.00261	<0.00005	-	-	-
Anthracene by GCMS	0.0000302	<0.000005	0.000302	<0.00005	-	-	-
Phenanthrene by GCMS	0.000125	<0.000005	0.00125	<0.00005	-	-	-
Fluorene by GCMS	0.0000102	<0.000005	0.000102	<0.00005	-	-	-
Chrysene by GCMS	0.0000544	<0.000005	0.000544	<0.00005	-	-	-
Pyrene by GCMS	0.00076	<0.000005	0.0076	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000538	<0.000005	0.000538	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0014	<0.000082	0.014	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.07
Conductivity (µS/cm)	437.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814749
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P11
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.07
Conductivity (µS/cm)	437.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	21.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.3
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814753
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P11
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.248	<0.2	2.48	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000877	<0.0005	0.00877	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00284	<0.001	0.0284	<0.01	-	-	-
Copper	0.00992	<0.0003	0.0992	<0.003	-	-	-
Lead	0.00222	<0.0002	0.0222	<0.002	-	-	-
Manganese	0.00977	<0.003	0.0977	<0.03	-	-	-
Nickel	0.0022	<0.0004	0.022	<0.004	-	-	-
Selenium	0.00172	<0.001	0.0172	<0.01	-	-	-
Vanadium	0.0305	<0.001	0.305	<0.01	-	-	-
Zinc	0.0136	<0.001	0.136	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.431	<0.019	4.31	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000266	<0.00001	0.00266	<0.0001	-	-	-
Acenaphthene by GCMS	0.000434	<0.000005	0.00434	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Fluoranthene by GCMS	0.000375	<0.000005	0.00375	<0.00005	-	-	-
Anthracene by GCMS	0.000119	<0.000005	0.00119	<0.00005	-	-	-
Phenanthrene by GCMS	0.000889	<0.000005	0.00889	<0.00005	-	-	-
Fluorene by GCMS	0.000113	<0.000005	0.00113	<0.00005	-	-	-
Chrysene by GCMS	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Pyrene by GCMS	0.00031	<0.000005	0.0031	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00255	<0.000082	0.0255	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	827.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.881

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	21.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.3
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814753
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P11
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	827.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.881

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814757
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P11
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000628	<0.0005	0.00628	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00303	<0.001	0.0303	<0.01	-	-	-
Copper	0.00769	<0.0003	0.0769	<0.003	-	-	-
Lead	0.000878	<0.0002	0.00878	<0.002	-	-	-
Manganese	0.00409	<0.003	0.0409	<0.03	-	-	-
Nickel	0.00225	<0.0004	0.0225	<0.004	-	-	-
Selenium	0.0011	<0.001	0.011	<0.01	-	-	-
Vanadium	0.0188	<0.001	0.188	<0.01	-	-	-
Zinc	0.00351	<0.001	0.0351	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.21	<0.019	2.1	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000237	<0.00001	0.00237	<0.0001	-	-	-
Acenaphthene by GCMS	0.000351	<0.000005	0.00351	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Fluoranthene by GCMS	0.00036	<0.000005	0.0036	<0.00005	-	-	-
Anthracene by GCMS	0.000103	<0.000005	0.00103	<0.00005	-	-	-
Phenanthrene by GCMS	0.000943	<0.000005	0.00943	<0.00005	-	-	-
Fluorene by GCMS	0.0000978	<0.000005	0.000978	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000353	<0.000005	0.00353	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00246	<0.000082	0.0246	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.54
Conductivity (µS/cm)	938.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814757
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P11
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.54
Conductivity (µS/cm)	938.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.9
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814765
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-N11
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000161	<0.00001	0.000161	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00251	<0.0005	0.0251	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00267	<0.001	0.0267	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.00794	<0.0002	0.0794	<0.002	-	-	-
Manganese	0.0375	<0.003	0.375	<0.03	-	-	-
Nickel	0.00101	<0.0004	0.0101	<0.004	-	-	-
Selenium	0.00297	<0.001	0.0297	<0.01	-	-	-
Vanadium	0.0577	<0.001	0.577	<0.01	-	-	-
Zinc	0.0288	<0.001	0.288	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.405	<0.019	4.05	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000019	<0.00001	0.00019	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000653	<0.000005	0.0000653	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000191	<0.000005	0.000191	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000021	<0.000005	0.00021	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000136	<0.000005	0.000136	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000942	<0.000082	0.000942	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	9.19
Conductivity (µS/cm)	183.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.9
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814765
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-N11
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	9.19
Conductivity (µS/cm)	183.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814769
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-N11
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00203	<0.0005	0.0203	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00285	<0.001	0.0285	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000434	<0.0004	0.00434	<0.004	-	-	-
Selenium	0.00254	<0.001	0.0254	<0.01	-	-	-
Vanadium	0.0541	<0.001	0.541	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000286	<0.00001	0.000286	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000096	<0.000005	0.000096	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000689	<0.000005	0.0000689	<0.00005	-	-	-
Fluoranthene by GCMS	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Anthracene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000778	<0.000005	0.000778	<0.00005	-	-	-
Fluorene by GCMS	0.00000875	<0.000005	0.0000875	<0.00005	-	-	-
Chrysene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Pyrene by GCMS	0.00014	<0.000005	0.0014	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0001	<0.000005	0.001	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000195	<0.000005	0.00195	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000597	<0.000005	0.000597	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000116	<0.000002	0.00116	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000254	<0.000005	0.000254	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00015	<0.000005	0.0015	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000119	<0.000005	0.00119	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0013	<0.000082	0.013	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.36
Conductivity (µS/cm)	178.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814769
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-N11
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.36
Conductivity (µS/cm)	178.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	11.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89.5
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814773
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-N11
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.77	<0.2	7.7	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000225	<0.00001	0.000225	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00444	<0.0005	0.0444	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00718	<0.001	0.0718	<0.01	-	-	-
Copper	0.00425	<0.0003	0.0425	<0.003	-	-	-
Lead	0.00187	<0.0002	0.0187	<0.002	-	-	-
Manganese	0.0125	<0.003	0.125	<0.03	-	-	-
Nickel	0.00178	<0.0004	0.0178	<0.004	-	-	-
Selenium	0.00527	<0.001	0.0527	<0.01	-	-	-
Vanadium	0.127	<0.001	1.27	<0.01	-	-	-
Zinc	0.0093	<0.001	0.093	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.19	<0.019	1.9	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000419	<0.00001	0.000419	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000191	<0.000005	0.000191	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000311	<0.000005	0.000311	<0.00005	-	-	-
Anthracene by GCMS	0.00000514	<0.000005	0.0000514	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000395	<0.000005	0.000395	<0.00005	-	-	-
Fluorene by GCMS	0.00000725	<0.000005	0.0000725	<0.00005	-	-	-
Chrysene by GCMS	0.00000839	<0.000005	0.0000839	<0.00005	-	-	-
Pyrene by GCMS	0.0000325	<0.000005	0.000325	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000208	<0.000082	0.00208	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.13
Conductivity (µS/cm)	262.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	11.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89.5
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814773
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-N11
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.13
Conductivity (µS/cm)	262.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814781
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-K11
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0096	<0.001	0.096	<0.01	-	-	-
Copper	0.00292	<0.0003	0.0292	<0.003	-	-	-
Lead	0.000433	<0.0002	0.00433	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0005	<0.0004	0.005	<0.004	-	-	-
Selenium	0.00102	<0.001	0.0102	<0.01	-	-	-
Vanadium	0.0102	<0.001	0.102	<0.01	-	-	-
Zinc	0.00348	<0.001	0.0348	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000083	<0.00001	0.00083	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000692	<0.000005	0.0000692	<0.00005	-	-	-
Fluoranthene by GCMS	0.000534	<0.000005	0.00534	<0.00005	-	-	-
Anthracene by GCMS	0.0000728	<0.000005	0.000728	<0.00005	-	-	-
Phenanthrene by GCMS	0.000782	<0.000005	0.00782	<0.00005	-	-	-
Fluorene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Chrysene by GCMS	0.0000307	<0.000005	0.000307	<0.00005	-	-	-
Pyrene by GCMS	0.000469	<0.000005	0.00469	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000032	<0.000005	0.00032	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00204	<0.000082	0.0204	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.54
Conductivity (µS/cm)	1,180.00
Temperature (°C)	23.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814781
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-K11
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.54
Conductivity (µS/cm)	1,180.00
Temperature (°C)	23.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85.6
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814785
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0019	<0.0005	0.019	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00246	<0.001	0.0246	<0.01	-	-	-
Copper	0.013	<0.0003	0.13	<0.003	-	-	-
Lead	0.00159	<0.0002	0.0159	<0.002	-	-	-
Manganese	0.0107	<0.003	0.107	<0.03	-	-	-
Nickel	0.00267	<0.0004	0.0267	<0.004	-	-	-
Selenium	0.0032	<0.001	0.032	<0.01	-	-	-
Vanadium	0.0766	<0.001	0.766	<0.01	-	-	-
Zinc	0.00581	<0.001	0.0581	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.581	<0.019	5.81	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000114	<0.00001	0.00114	<0.0001	-	-	-
Acenaphthene by GCMS	0.000209	<0.000005	0.00209	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000172	<0.000005	0.00172	<0.00005	-	-	-
Anthracene by GCMS	0.0000423	<0.000005	0.000423	<0.00005	-	-	-
Phenanthrene by GCMS	0.000357	<0.000005	0.00357	<0.00005	-	-	-
Fluorene by GCMS	0.0000527	<0.000005	0.000527	<0.00005	-	-	-
Chrysene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Pyrene by GCMS	0.000263	<0.000005	0.00263	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00123	<0.000082	0.0123	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.28
Conductivity (µS/cm)	583.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85.6
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814785
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.28
Conductivity (µS/cm)	583.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.52
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.6
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814789
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-K11
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00416	<0.001	0.0416	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000207	<0.0002	0.00207	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000666	<0.0004	0.00666	<0.004	-	-	-
Selenium	0.00104	<0.001	0.0104	<0.01	-	-	-
Vanadium	0.0288	<0.001	0.288	<0.01	-	-	-
Zinc	0.00251	<0.001	0.0251	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000034	<0.00001	0.00034	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000987	<0.000005	0.0000987	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000996	<0.000005	0.000996	<0.00005	-	-	-
Anthracene by GCMS	0.000006	<0.000005	0.00006	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000836	<0.000005	0.000836	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Pyrene by GCMS	0.000113	<0.000005	0.00113	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000371	<0.000082	0.00371	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.31
Conductivity (µS/cm)	613.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.52
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.6
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814789
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-K11
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.31
Conductivity (µS/cm)	613.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.31
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.8
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814793
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-K11
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.256	<0.2	2.56	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000744	<0.0005	0.00744	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00309	<0.001	0.0309	<0.01	-	-	-
Copper	0.02	<0.0003	0.2	<0.003	-	-	-
Lead	0.00215	<0.0002	0.0215	<0.002	-	-	-
Manganese	0.00768	<0.003	0.0768	<0.03	-	-	-
Nickel	0.00604	<0.0004	0.0604	<0.004	-	-	-
Selenium	0.00206	<0.001	0.0206	<0.01	-	-	-
Vanadium	0.0122	<0.001	0.122	<0.01	-	-	-
Zinc	0.00779	<0.001	0.0779	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.678	<0.019	6.78	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000423	<0.00001	0.00423	<0.0001	-	-	-
Acenaphthene by GCMS	0.000515	<0.000005	0.00515	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Fluoranthene by GCMS	0.000819	<0.000005	0.00819	<0.00005	-	-	-
Anthracene by GCMS	0.000207	<0.000005	0.00207	<0.00005	-	-	-
Phenanthrene by GCMS	0.00251	<0.000005	0.0251	<0.00005	-	-	-
Fluorene by GCMS	0.000226	<0.000005	0.00226	<0.00005	-	-	-
Chrysene by GCMS	0.0000378	<0.000005	0.000378	<0.00005	-	-	-
Pyrene by GCMS	0.000581	<0.000005	0.00581	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000437	<0.000005	0.000437	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00539	<0.000082	0.0539	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.39
Conductivity (µS/cm)	1,040.00
Temperature (°C)	22.90
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.31
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.8
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814793
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-K11
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.012	<0.01	0.12	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.39
Conductivity (µS/cm)	1,040.00
Temperature (°C)	22.90
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85.1
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814801
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-J10
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00242	<0.0005	0.0242	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00106	<0.001	0.0106	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000419	<0.0004	0.00419	<0.004	-	-	-
Selenium	0.00293	<0.001	0.0293	<0.01	-	-	-
Vanadium	0.0446	<0.001	0.446	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.196	<0.019	1.96	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000179	<0.00001	0.000179	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000941	<0.000005	0.0000941	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000093	<0.000005	0.000093	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000947	<0.000005	0.0000947	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	7.28
Conductivity (µS/cm)	155.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85.1
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814801
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-J10
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	7.28
Conductivity (µS/cm)	155.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814805
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-J10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00273	<0.0005	0.0273	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00142	<0.0003	0.0142	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00298	<0.001	0.0298	<0.01	-	-	-
Vanadium	0.0414	<0.001	0.414	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000132	<0.00001	0.000132	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	9.38
Conductivity (µS/cm)	90.10
Temperature (°C)	21.50
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814805
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-J10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	9.38
Conductivity (µS/cm)	90.10
Temperature (°C)	21.50
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814809
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-J10
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00321	<0.0005	0.0321	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00659	<0.0003	0.0659	<0.003	-	-	-
Lead	0.00359	<0.0002	0.0359	<0.002	-	-	-
Manganese	0.0477	<0.003	0.477	<0.03	-	-	-
Nickel	0.00149	<0.0004	0.0149	<0.004	-	-	-
Selenium	0.0165	<0.001	0.165	<0.01	-	-	-
Vanadium	0.0395	<0.001	0.395	<0.01	-	-	-
Zinc	0.00995	<0.001	0.0995	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.425	<0.019	4.25	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000127	<0.00001	0.000127	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	7.59
Conductivity (µS/cm)	170.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814809
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-J10
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	7.59
Conductivity (µS/cm)	170.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.35
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.7
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814817
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-H10
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00151	<0.0005	0.0151	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00193	<0.001	0.0193	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000488	<0.0004	0.00488	<0.004	-	-	-
Selenium	0.00798	<0.001	0.0798	<0.01	-	-	-
Vanadium	0.081	<0.001	0.81	<0.01	-	-	-
Zinc	0.00222	<0.001	0.0222	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.505	<0.019	5.05	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000212	<0.00001	0.000212	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000978	<0.000005	0.0000978	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000411	<0.000005	0.000411	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000025	<0.000005	0.00025	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Pyrene by GCMS	0.000061	<0.000005	0.00061	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000189	<0.000082	0.00189	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.68
Conductivity (µS/cm)	273.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.35
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.7
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814817
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-H10
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.68
Conductivity (µS/cm)	273.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.4
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814822
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-H10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0038	<0.001	0.038	<0.01	-	-	-
Copper	0.00144	<0.0003	0.0144	<0.003	-	-	-
Lead	0.00056	<0.0002	0.0056	<0.002	-	-	-
Manganese	0.0506	<0.003	0.506	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00212	<0.001	0.0212	<0.01	-	-	-
Vanadium	0.0385	<0.001	0.385	<0.01	-	-	-
Zinc	0.00284	<0.001	0.0284	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.115	<0.019	1.15	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000239	<0.00001	0.000239	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Anthracene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000682	<0.000005	0.000682	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000145	<0.000005	0.00145	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000371	<0.000082	0.00371	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.17
Conductivity (µS/cm)	519.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.4
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814822
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-H10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.17
Conductivity (µS/cm)	519.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814826
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-H10
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.03	<0.2	10.3	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00303	<0.0005	0.0303	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00073	<0.0003	0.0073	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0155	<0.003	0.155	<0.03	-	-	-
Nickel	0.000823	<0.0004	0.00823	<0.004	-	-	-
Selenium	0.00656	<0.001	0.0656	<0.01	-	-	-
Vanadium	0.0114	<0.001	0.114	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000011	<0.00001	0.00011	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	7.45
Conductivity (µS/cm)	248.00
Temperature (°C)	21.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814826
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-H10
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	7.45
Conductivity (µS/cm)	248.00
Temperature (°C)	21.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814831
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P10
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.205	<0.2	2.05	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.07	<0.05	0.7	<0.5	-	-	-
Arsenic	0.00193	<0.0005	0.0193	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00262	<0.001	0.0262	<0.01	-	-	-
Copper	0.0156	<0.0003	0.156	<0.003	-	-	-
Lead	0.0022	<0.0002	0.022	<0.002	-	-	-
Manganese	0.0147	<0.003	0.147	<0.03	-	-	-
Nickel	0.00287	<0.0004	0.0287	<0.004	-	-	-
Selenium	0.00339	<0.001	0.0339	<0.01	-	-	-
Vanadium	0.0772	<0.001	0.772	<0.01	-	-	-
Zinc	0.018	<0.001	0.18	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.898	<0.019	8.98	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000146	<0.00001	0.00146	<0.0001	-	-	-
Acenaphthene by GCMS	0.000178	<0.000005	0.00178	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000185	<0.000005	0.00185	<0.00005	-	-	-
Anthracene by GCMS	0.0000463	<0.000005	0.000463	<0.00005	-	-	-
Phenanthrene by GCMS	0.000377	<0.000005	0.00377	<0.00005	-	-	-
Fluorene by GCMS	0.0000484	<0.000005	0.000484	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000282	<0.000005	0.00282	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00126	<0.000082	0.0126	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.20
Conductivity (µS/cm)	579.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814831
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P10
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.20
Conductivity (µS/cm)	579.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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13:58:51 13/07/2018

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	21.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.4
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814839
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-K13
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000561	<0.0005	0.00561	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0314	<0.001	0.314	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000677	<0.0004	0.00677	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0602	<0.001	0.602	<0.01	-	-	-
Zinc	0.00406	<0.001	0.0406	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000316	<0.00001	0.000316	<0.0001	-	-	-
Acenaphthene by GCMS	0.000031	<0.000005	0.00031	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000203	<0.000005	0.00203	<0.00005	-	-	-
Anthracene by GCMS	0.00188	<0.000005	0.0188	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000957	<0.000005	0.000957	<0.00005	-	-	-
Fluorene by GCMS	0.0000191	<0.000005	0.000191	<0.00005	-	-	-
Chrysene by GCMS	0.0000717	<0.000005	0.000717	<0.00005	-	-	-
Pyrene by GCMS	0.00115	<0.000005	0.0115	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000407	<0.000005	0.000407	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00354	<0.000082	0.0354	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.21
Conductivity (µS/cm)	578.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.881

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	21.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82.4
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814839
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-K13
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.012	<0.01	0.12	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.21
Conductivity (µS/cm)	578.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.881

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814843
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-K13
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.233	<0.2	2.33	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00117	<0.0005	0.0117	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00218	<0.001	0.0218	<0.01	-	-	-
Copper	0.0043	<0.0003	0.043	<0.003	-	-	-
Lead	0.000307	<0.0002	0.00307	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00213	<0.0004	0.0213	<0.004	-	-	-
Selenium	0.00348	<0.001	0.0348	<0.01	-	-	-
Vanadium	0.067	<0.001	0.67	<0.01	-	-	-
Zinc	0.034	<0.001	0.34	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000204	<0.00001	0.00204	<0.0001	-	-	-
Acenaphthene by GCMS	0.000138	<0.000005	0.00138	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000551	<0.000005	0.0000551	<0.00005	-	-	-
Fluoranthene by GCMS	0.000177	<0.000005	0.00177	<0.00005	-	-	-
Anthracene by GCMS	0.0000235	<0.000005	0.000235	<0.00005	-	-	-
Phenanthrene by GCMS	0.000367	<0.000005	0.00367	<0.00005	-	-	-
Fluorene by GCMS	0.000039	<0.000005	0.00039	<0.00005	-	-	-
Chrysene by GCMS	0.0000188	<0.000005	0.000188	<0.00005	-	-	-
Pyrene by GCMS	0.000186	<0.000005	0.00186	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00118	<0.000082	0.0118	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.21
Conductivity (µS/cm)	596.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814843
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-K13
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.21
Conductivity (µS/cm)	596.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	19.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.5
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814849
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-K13
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.311	<0.2	3.11	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00122	<0.0005	0.0122	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0023	<0.001	0.023	<0.01	-	-	-
Copper	0.00748	<0.0003	0.0748	<0.003	-	-	-
Lead	0.000405	<0.0002	0.00405	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00187	<0.0004	0.0187	<0.004	-	-	-
Selenium	0.00645	<0.001	0.0645	<0.01	-	-	-
Vanadium	0.0949	<0.001	0.949	<0.01	-	-	-
Zinc	0.00347	<0.001	0.0347	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0227	<0.019	0.227	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000335	<0.00001	0.00335	<0.0001	-	-	-
Acenaphthene by GCMS	0.000332	<0.000005	0.00332	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000663	<0.000005	0.0000663	<0.00005	-	-	-
Fluoranthene by GCMS	0.000129	<0.000005	0.00129	<0.00005	-	-	-
Anthracene by GCMS	0.0000236	<0.000005	0.000236	<0.00005	-	-	-
Phenanthrene by GCMS	0.000327	<0.000005	0.00327	<0.00005	-	-	-
Fluorene by GCMS	0.0000664	<0.000005	0.000664	<0.00005	-	-	-
Chrysene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Pyrene by GCMS	0.00014	<0.000005	0.0014	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000162	<0.000005	0.000162	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00139	<0.000082	0.0139	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.20
Conductivity (µS/cm)	579.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	19.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83.5
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814849
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-K13
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.20
Conductivity (µS/cm)	579.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814853
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-K15
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00441	<0.0005	0.0441	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00266	<0.0003	0.0266	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000666	<0.0004	0.00666	<0.004	-	-	-
Selenium	0.00241	<0.001	0.0241	<0.01	-	-	-
Vanadium	0.0129	<0.001	0.129	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000161	<0.000005	0.000161	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000864	<0.000005	0.0000864	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000156	<0.000005	0.000156	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	9.14
Conductivity (µS/cm)	150.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814853
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-K15
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	9.14
Conductivity (µS/cm)	150.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.112	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814861
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-L17
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.553	<0.2	5.53	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00442	<0.0005	0.0442	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00184	<0.001	0.0184	<0.01	-	-	-
Copper	0.00984	<0.0003	0.0984	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00261	<0.0004	0.0261	<0.004	-	-	-
Selenium	0.00286	<0.001	0.0286	<0.01	-	-	-
Vanadium	0.115	<0.001	1.15	<0.01	-	-	-
Zinc	0.00934	<0.001	0.0934	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000102	<0.00001	0.00102	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000555	<0.000005	0.000555	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000444	<0.000005	0.00444	<0.00005	-	-	-
Fluoranthene by GCMS	0.000152	<0.000005	0.00152	<0.00005	-	-	-
Anthracene by GCMS	0.0000601	<0.000005	0.000601	<0.00005	-	-	-
Phenanthrene by GCMS	0.000397	<0.000005	0.00397	<0.00005	-	-	-
Fluorene by GCMS	0.000191	<0.000005	0.00191	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00151	<0.000082	0.0151	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.94
Conductivity (µS/cm)	362.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.112	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814861
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-L17
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.94
Conductivity (µS/cm)	362.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814865
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-L17
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.748	<0.2	7.48	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00289	<0.0005	0.0289	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00212	<0.001	0.0212	<0.01	-	-	-
Copper	0.0208	<0.0003	0.208	<0.003	-	-	-
Lead	0.000452	<0.0002	0.00452	<0.002	-	-	-
Manganese	0.00427	<0.003	0.0427	<0.03	-	-	-
Nickel	0.00423	<0.0004	0.0423	<0.004	-	-	-
Selenium	0.00239	<0.001	0.0239	<0.01	-	-	-
Vanadium	0.0686	<0.001	0.686	<0.01	-	-	-
Zinc	0.00435	<0.001	0.0435	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.301	<0.019	3.01	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000128	<0.00001	0.00128	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000677	<0.000005	0.000677	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000534	<0.000005	0.000534	<0.00005	-	-	-
Fluoranthene by GCMS	0.000132	<0.000005	0.00132	<0.00005	-	-	-
Anthracene by GCMS	0.0000302	<0.000005	0.000302	<0.00005	-	-	-
Phenanthrene by GCMS	0.000191	<0.000005	0.00191	<0.00005	-	-	-
Fluorene by GCMS	0.0000516	<0.000005	0.000516	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000762	<0.000082	0.00762	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.22
Conductivity (µS/cm)	507.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814865
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-L17
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.22
Conductivity (µS/cm)	507.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814874
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P10
Depth (m)	2.30 - 2.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.784	<0.2	7.84	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	1.3	<0.05	13	<0.5	-	-	-
Arsenic	0.00224	<0.0005	0.0224	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0025	<0.001	0.025	<0.01	-	-	-
Copper	0.0144	<0.0003	0.144	<0.003	-	-	-
Lead	0.00112	<0.0002	0.0112	<0.002	-	-	-
Manganese	0.00693	<0.003	0.0693	<0.03	-	-	-
Nickel	0.00356	<0.0004	0.0356	<0.004	-	-	-
Selenium	0.00357	<0.001	0.0357	<0.01	-	-	-
Vanadium	0.054	<0.001	0.54	<0.01	-	-	-
Zinc	0.00422	<0.001	0.0422	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.476	<0.019	4.76	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000941	<0.00001	0.000941	<0.0001	-	-	-
Acenaphthene by GCMS	0.000161	<0.000005	0.00161	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000138	<0.000005	0.00138	<0.00005	-	-	-
Anthracene by GCMS	0.0000366	<0.000005	0.000366	<0.00005	-	-	-
Phenanthrene by GCMS	0.000336	<0.000005	0.00336	<0.00005	-	-	-
Fluorene by GCMS	0.0000554	<0.000005	0.000554	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000237	<0.000005	0.00237	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00106	<0.000082	0.0106	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.23
Conductivity (µS/cm)	531.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814874
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-P10
Depth (m)	2.30 - 2.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	11.23
Conductivity (µS/cm)	531.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814882
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-R11
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00189	<0.0005	0.0189	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00211	<0.001	0.0211	<0.01	-	-	-
Copper	0.000667	<0.0003	0.00667	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000813	<0.0004	0.00813	<0.004	-	-	-
Selenium	0.00217	<0.001	0.0217	<0.01	-	-	-
Vanadium	0.0605	<0.001	0.605	<0.01	-	-	-
Zinc	0.00469	<0.001	0.0469	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.546	<0.019	5.46	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000043	<0.00001	0.00043	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000761	<0.000005	0.0000761	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000781	<0.000005	0.000781	<0.00005	-	-	-
Anthracene by GCMS	0.00000818	<0.000005	0.0000818	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000484	<0.000005	0.000484	<0.00005	-	-	-
Fluorene by GCMS	0.00000805	<0.000005	0.0000805	<0.00005	-	-	-
Chrysene by GCMS	0.0000143	<0.000005	0.000143	<0.00005	-	-	-
Pyrene by GCMS	0.000114	<0.000005	0.00114	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000357	<0.000082	0.00357	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.76
Conductivity (µS/cm)	342.00
Temperature (°C)	22.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814882
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-R11
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.76
Conductivity (µS/cm)	342.00
Temperature (°C)	22.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	18.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84.2
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814886
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-R11
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.216	<0.2	2.16	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0038	<0.0005	0.038	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00123	<0.001	0.0123	<0.01	-	-	-
Copper	0.00215	<0.0003	0.0215	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00195	<0.0004	0.0195	<0.004	-	-	-
Selenium	0.00377	<0.001	0.0377	<0.01	-	-	-
Vanadium	0.17	<0.001	1.7	<0.01	-	-	-
Zinc	0.00336	<0.001	0.0336	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000044	<0.00001	0.00044	<0.0001	-	-	-
Acenaphthene by GCMS	0.00026	<0.000005	0.0026	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000451	<0.000005	0.000451	<0.00005	-	-	-
Anthracene by GCMS	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000822	<0.000005	0.000822	<0.00005	-	-	-
Fluorene by GCMS	0.0000707	<0.000005	0.000707	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000508	<0.000005	0.000508	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000567	<0.000082	0.00567	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.63
Conductivity (µS/cm)	262.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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13:58:51 13/07/2018

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	18.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84.2
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814886
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-R11
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.63
Conductivity (µS/cm)	262.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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13:58:51 13/07/2018

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814890
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-R11
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00621	<0.0005	0.0621	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000267	<0.0002	0.00267	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00111	<0.0004	0.0111	<0.004	-	-	-
Selenium	0.00353	<0.001	0.0353	<0.01	-	-	-
Vanadium	0.1	<0.001	1	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000795	<0.00001	0.000795	<0.0001	-	-	-
Acenaphthene by GCMS	0.000185	<0.000005	0.00185	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000735	<0.000005	0.0000735	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000566	<0.000005	0.000566	<0.00005	-	-	-
Anthracene by GCMS	0.0000277	<0.000005	0.000277	<0.00005	-	-	-
Phenanthrene by GCMS	0.000139	<0.000005	0.00139	<0.00005	-	-	-
Fluorene by GCMS	0.0000787	<0.000005	0.000787	<0.00005	-	-	-
Chrysene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
Pyrene by GCMS	0.0000648	<0.000005	0.000648	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000181	<0.000005	0.000181	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000693	<0.000005	0.0000693	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00069	<0.000082	0.0069	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.44
Conductivity (µS/cm)	159.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180626-3
Lab Sample Number(s)	17814890
Sampled Date	22-Jun-2018
Customer Sample Ref.	40A-R11
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Jun-2018
pH (pH Units)	10.44
Conductivity (µS/cm)	159.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Test Completion Dates

Lab Sample No(s)	17814817	17814822	17814826	17814835	17814801	17814805	17814809	17814813	17814781	17814789
Customer Sample Ref.	40A-H10	40A-H10	40A-H10	40A-H10-V	40A-J10	40A-J10	40A-J10	40A-J10-V	40A-K11	40A-K11
AGS Ref.										
Depth	0.40 - 0.40	1.00 - 1.00	2.00 - 2.00	3.30 - 3.30	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	28-Jun-2018		28-Jun-2018			03-Jul-2018			03-Jul-2018	
Ammoniacal Nitrogen	29-Jun-2018	02-Jul-2018	02-Jul-2018		03-Jul-2018	02-Jul-2018	03-Jul-2018		02-Jul-2018	03-Jul-2018
Ammonium Soil by Titration	03-Jul-2018	03-Jul-2018	03-Jul-2018	06-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	06-Jul-2018	03-Jul-2018	03-Jul-2018
Anions by Kone (soil)	28-Jun-2018		28-Jun-2018			28-Jun-2018			28-Jun-2018	
Asbestos ID in Solid Samples	02-Jul-2018		29-Jun-2018			02-Jul-2018			02-Jul-2018	
Asbestos Quantification - Full	04-Jul-2018					04-Jul-2018			04-Jul-2018	
Calorific Value (S)*	13-Jul-2018	13-Jul-2018	13-Jul-2018	13-Jul-2018	13-Jul-2018	13-Jul-2018	13-Jul-2018	13-Jul-2018	13-Jul-2018	13-Jul-2018
CEN 10:1 Leachate (1 Stage)	27-Jun-2018	28-Jun-2018	28-Jun-2018		27-Jun-2018	27-Jun-2018	27-Jun-2018		27-Jun-2018	27-Jun-2018
CEN Readings	30-Jun-2018	30-Jun-2018	30-Jun-2018		28-Jun-2018	30-Jun-2018	30-Jun-2018		28-Jun-2018	30-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	03-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018
Dissolved Metals by ICP-MS	03-Jul-2018	04-Jul-2018	04-Jul-2018		12-Jul-2018	04-Jul-2018	03-Jul-2018		04-Jul-2018	03-Jul-2018
EPH CWG (Aliphatic) Aqueous GC (W)	03-Jul-2018	01-Jul-2018	01-Jul-2018		03-Jul-2018	01-Jul-2018	03-Jul-2018		03-Jul-2018	03-Jul-2018
EPH CWG (Aliphatic) GC (S)	29-Jun-2018	28-Jun-2018	28-Jun-2018	04-Jul-2018	02-Jul-2018	29-Jun-2018	28-Jun-2018	04-Jul-2018	29-Jun-2018	28-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	03-Jul-2018	01-Jul-2018	01-Jul-2018		03-Jul-2018	01-Jul-2018	03-Jul-2018		03-Jul-2018	03-Jul-2018
EPH CWG (Aromatic) GC (S)	29-Jun-2018	29-Jun-2018	29-Jun-2018	04-Jul-2018	02-Jul-2018	29-Jun-2018	29-Jun-2018	04-Jul-2018	29-Jun-2018	29-Jun-2018
GRO by GC-FID (S)	28-Jun-2018	28-Jun-2018	29-Jun-2018	04-Jul-2018	28-Jun-2018	28-Jun-2018	29-Jun-2018	04-Jul-2018	29-Jun-2018	28-Jun-2018
GRO by GC-FID (W)	02-Jul-2018	02-Jul-2018	02-Jul-2018		02-Jul-2018	02-Jul-2018	02-Jul-2018		02-Jul-2018	30-Jun-2018
Mercury Dissolved	03-Jul-2018	03-Jul-2018	03-Jul-2018		03-Jul-2018	03-Jul-2018	03-Jul-2018		03-Jul-2018	03-Jul-2018
Metals in solid samples by OES	29-Jun-2018	28-Jun-2018	28-Jun-2018	05-Jul-2018	29-Jun-2018	29-Jun-2018	29-Jun-2018	04-Jul-2018	29-Jun-2018	29-Jun-2018
PAH by GCMS	27-Jun-2018	27-Jun-2018	28-Jun-2018	03-Jul-2018	27-Jun-2018	28-Jun-2018	27-Jun-2018	03-Jul-2018	27-Jun-2018	27-Jun-2018
PAH Spec MS - Aqueous (W)	02-Jul-2018	02-Jul-2018	02-Jul-2018		02-Jul-2018	02-Jul-2018	02-Jul-2018		02-Jul-2018	02-Jul-2018
pH	01-Jul-2018	01-Jul-2018	01-Jul-2018	03-Jul-2018	29-Jun-2018	01-Jul-2018	01-Jul-2018	04-Jul-2018	01-Jul-2018	03-Jul-2018
pH Value	02-Jul-2018	02-Jul-2018	02-Jul-2018		02-Jul-2018	02-Jul-2018	02-Jul-2018		02-Jul-2018	02-Jul-2018
Phenols by HPLC (S)	02-Jul-2018	03-Jul-2018	03-Jul-2018	06-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018	03-Jul-2018	02-Jul-2018
Sample description	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018
Total Organic Carbon	28-Jun-2018	28-Jun-2018	28-Jun-2018	05-Jul-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	04-Jul-2018	28-Jun-2018	28-Jun-2018
Total Sulphate	29-Jun-2018		02-Jul-2018			02-Jul-2018			29-Jun-2018	
Total Sulphur	28-Jun-2018		28-Jun-2018			28-Jun-2018			28-Jun-2018	
TPH CWG (W)	03-Jul-2018	02-Jul-2018	02-Jul-2018		03-Jul-2018	02-Jul-2018	03-Jul-2018		03-Jul-2018	03-Jul-2018
TPH CWG GC (S)	29-Jun-2018	29-Jun-2018	29-Jun-2018	04-Jul-2018	02-Jul-2018	29-Jun-2018	29-Jun-2018	04-Jul-2018	29-Jun-2018	29-Jun-2018
VOC MS (S)	28-Jun-2018	28-Jun-2018	28-Jun-2018	03-Jul-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	03-Jul-2018	28-Jun-2018	28-Jun-2018

Lab Sample No(s)	17814793	17814839	17814843	17814849	17814853	17814797	17814857	17814861	17814865	17814869
Customer Sample Ref.	40A-K11	40A-K13	40A-K13	40A-K13	40A-K15	40A-K11-V	40A-K15-V	40A-L17	40A-L17	40A-L17-V
AGS Ref.										
Depth	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	2.90 - 2.90	0.90 - 0.90	0.70 - 0.70	1.70 - 1.70	3.20 - 3.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	03-Jul-2018		28-Jun-2018		28-Jun-2018				28-Jun-2018	
Ammoniacal Nitrogen	03-Jul-2018	03-Jul-2018	02-Jul-2018	03-Jul-2018	03-Jul-2018			02-Jul-2018	02-Jul-2018	
Ammonium Soil by Titration	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	06-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	06-Jul-2018
Anions by Kone (soil)	28-Jun-2018		28-Jun-2018		28-Jun-2018				28-Jun-2018	
Asbestos ID in Solid Samples	02-Jul-2018		02-Jul-2018		02-Jul-2018				02-Jul-2018	
Asbestos Quantification - Full	04-Jul-2018									
Calorific Value (S)*	13-Jul-2018	13-Jul-2018	13-Jul-2018	13-Jul-2018	13-Jul-2018	13-Jul-2018	11-Jul-2018	11-Jul-2018	11-Jul-2018	11-Jul-2018
CEN 10:1 Leachate (1 Stage)	27-Jun-2018	27-Jun-2018	27-Jun-2018	27-Jun-2018	27-Jun-2018			28-Jun-2018	27-Jun-2018	
CEN Readings	28-Jun-2018	30-Jun-2018	30-Jun-2018	30-Jun-2018	30-Jun-2018			30-Jun-2018	30-Jun-2018	
Cyanide Comp/Free/Total/Thiocyanate	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	06-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018
Dissolved Metals by ICP-MS	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018			04-Jul-2018	04-Jul-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018			01-Jul-2018	03-Jul-2018	
EPH CWG (Aliphatic) GC (S)	28-Jun-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	05-Jul-2018	04-Jul-2018	28-Jun-2018	28-Jun-2018	04-Jul-2018
EPH CWG (Aromatic) Aqueous GC (W)	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018			01-Jul-2018	03-Jul-2018	
EPH CWG (Aromatic) GC (S)	29-Jun-2018	29-Jun-2018	29-Jun-2018	28-Jun-2018	29-Jun-2018	05-Jul-2018	04-Jul-2018	29-Jun-2018	29-Jun-2018	04-Jul-2018
GRO by GC-FID (S)	29-Jun-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	05-Jul-2018	04-Jul-2018	28-Jun-2018	28-Jun-2018	04-Jul-2018
GRO by GC-FID (W)	02-Jul-2018	29-Jun-2018	30-Jun-2018	29-Jun-2018	02-Jul-2018			02-Jul-2018	02-Jul-2018	
Mercury Dissolved	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018			03-Jul-2018	03-Jul-2018	
Metals in solid samples by OES	29-Jun-2018	29-Jun-2018	29-Jun-2018	29-Jun-2018	28-Jun-2018	05-Jul-2018	05-Jul-2018	29-Jun-2018	29-Jun-2018	05-Jul-2018
PAH by GCMS	27-Jun-2018	27-Jun-2018	27-Jun-2018	27-Jun-2018	27-Jun-2018	04-Jul-2018	03-Jul-2018	27-Jun-2018	27-Jun-2018	03-Jul-2018
PAH Spec MS - Aqueous (W)	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018			02-Jul-2018	02-Jul-2018	
pH	01-Jul-2018	29-Jun-2018	01-Jul-2018	29-Jun-2018	01-Jul-2018	06-Jul-2018	03-Jul-2018	29-Jun-2018	01-Jul-2018	03-Jul-2018
pH Value	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	03-Jul-2018			02-Jul-2018	02-Jul-2018	
Phenols by HPLC (S)	03-Jul-2018	02-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	05-Jul-2018	06-Jul-2018	03-Jul-2018	03-Jul-2018	06-Jul-2018
Sample description	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018
Total Organic Carbon	28-Jun-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	03-Jul-2018	04-Jul-2018	28-Jun-2018	28-Jun-2018	03-Jul-2018
Total Sulphate	02-Jul-2018		02-Jul-2018		02-Jul-2018				29-Jun-2018	
Total Sulphur	28-Jun-2018		02-Jul-2018		28-Jun-2018				02-Jul-2018	
TPH CWG (W)	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018			02-Jul-2018	03-Jul-2018	
TPH CWG GC (S)	29-Jun-2018	29-Jun-2018	29-Jun-2018	28-Jun-2018	29-Jun-2018	05-Jul-2018	04-Jul-2018	29-Jun-2018	29-Jun-2018	04-Jul-2018
VOC MS (S)	28-Jun-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	03-Jul-2018	03-Jul-2018	28-Jun-2018	28-Jun-2018	03-Jul-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180626-3	**Client Reference:**		**Report Number:**	464218
Location:	Llanwern	**Order Number:**	LLA451	**Superseded Report:**	464016

Lab Sample No(s)	17814765	17814769	17814773	17814777	17814741	17814785	17814831	17814874	17814745	17814749
Customer Sample Ref.	40A-N11	40A-N11	40A-N11	40A-N11-V	40A-P10	40A-P10	40A-P10	40A-P10	40A-P11	40A-P11
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.20 - 2.20	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		28-Jun-2018			28-Jun-2018		28-Jun-2018			28-Jun-2018
Ammoniacal Nitrogen	03-Jul-2018	02-Jul-2018	03-Jul-2018		02-Jul-2018	02-Jul-2018	02-Jul-2018	03-Jul-2018	02-Jul-2018	03-Jul-2018
Ammonium Soil by Titration	03-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018
Anions by Kone (soil)		28-Jun-2018			28-Jun-2018		28-Jun-2018			28-Jun-2018
Asbestos ID in Solid Samples		02-Jul-2018			02-Jul-2018		02-Jul-2018			29-Jun-2018
Asbestos Quantification - Full					04-Jul-2018					04-Jul-2018
Calorific Value (S)*	11-Jul-2018	11-Jul-2018	11-Jul-2018	11-Jul-2018	11-Jul-2018	11-Jul-2018	11-Jul-2018	11-Jul-2018	11-Jul-2018	11-Jul-2018
CEN 10:1 Leachate (1 Stage)	27-Jun-2018	27-Jun-2018	27-Jun-2018		28-Jun-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	27-Jun-2018	27-Jun-2018
CEN Readings	28-Jun-2018	28-Jun-2018	28-Jun-2018		30-Jun-2018	30-Jun-2018	30-Jun-2018	30-Jun-2018	30-Jun-2018	30-Jun-2018
Cyanide Comp/Free/Total/Thiocyanate	03-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018
Dissolved Metals by ICP-MS	03-Jul-2018	12-Jul-2018	04-Jul-2018		04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018
EPH CWG (Aliphatic) Aqueous GC (W)	03-Jul-2018	03-Jul-2018	03-Jul-2018		03-Jul-2018	01-Jul-2018	01-Jul-2018	01-Jul-2018	03-Jul-2018	03-Jul-2018
EPH CWG (Aliphatic) GC (S)	29-Jun-2018	30-Jun-2018	30-Jun-2018	04-Jul-2018	30-Jun-2018	28-Jun-2018	29-Jun-2018	28-Jun-2018	28-Jun-2018	30-Jun-2018
EPH CWG (Aromatic) Aqueous GC (W)	03-Jul-2018	03-Jul-2018	03-Jul-2018		03-Jul-2018	01-Jul-2018	01-Jul-2018	01-Jul-2018	03-Jul-2018	03-Jul-2018
EPH CWG (Aromatic) GC (S)	29-Jun-2018	30-Jun-2018	30-Jun-2018	04-Jul-2018	30-Jun-2018	29-Jun-2018	29-Jun-2018	29-Jun-2018	29-Jun-2018	30-Jun-2018
GRO by GC-FID (S)	30-Jun-2018	30-Jun-2018	30-Jun-2018	03-Jul-2018	30-Jun-2018	30-Jun-2018	30-Jun-2018	29-Jun-2018	29-Jun-2018	02-Jul-2018
GRO by GC-FID (W)	02-Jul-2018	02-Jul-2018	02-Jul-2018		02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	30-Jun-2018	02-Jul-2018
Mercury Dissolved	03-Jul-2018	03-Jul-2018	03-Jul-2018		03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018
Metals in solid samples by OES	28-Jun-2018	29-Jun-2018	29-Jun-2018	05-Jul-2018	29-Jun-2018	29-Jun-2018	28-Jun-2018	29-Jun-2018	29-Jun-2018	29-Jun-2018
PAH by GCMS	27-Jun-2018	28-Jun-2018	28-Jun-2018	03-Jul-2018	28-Jun-2018	28-Jun-2018	27-Jun-2018	27-Jun-2018	28-Jun-2018	28-Jun-2018
PAH Spec MS - Aqueous (W)	02-Jul-2018	02-Jul-2018	02-Jul-2018		02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018
pH	01-Jul-2018	01-Jul-2018	01-Jul-2018	04-Jul-2018	01-Jul-2018	27-Jun-2018	01-Jul-2018	01-Jul-2018	27-Jun-2018	01-Jul-2018
pH Value	02-Jul-2018	02-Jul-2018	02-Jul-2018		02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018
Phenols by HPLC (S)	03-Jul-2018	28-Jun-2018	03-Jul-2018	06-Jul-2018	02-Jul-2018	03-Jul-2018	02-Jul-2018	02-Jul-2018	03-Jul-2018	28-Jun-2018
Sample description	26-Jun-2018	27-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018
Total Organic Carbon	28-Jun-2018	28-Jun-2018	28-Jun-2018	04-Jul-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018
Total Sulphate		29-Jun-2018			02-Jul-2018		02-Jul-2018			29-Jun-2018
Total Sulphur		28-Jun-2018			28-Jun-2018		28-Jun-2018			02-Jul-2018
TPH CWG (W)	03-Jul-2018	03-Jul-2018	03-Jul-2018		03-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	03-Jul-2018	03-Jul-2018
TPH CWG GC (S)	30-Jun-2018	30-Jun-2018	30-Jun-2018	04-Jul-2018	30-Jun-2018	30-Jun-2018	30-Jun-2018	29-Jun-2018	29-Jun-2018	02-Jul-2018
VOC MS (S)	28-Jun-2018	28-Jun-2018	28-Jun-2018	03-Jul-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	29-Jun-2018	28-Jun-2018	29-Jun-2018

Lab Sample No(s)	17814753	17814757	17814878	17814761	17814882	17814886	17814890	17814894
Customer Sample Ref.	40A-P11	40A-P11	40A-P10-V	40A-P11-V	40A-R11	40A-R11	40A-R11	40A-R11-V
AGS Ref.								
Depth	1.50 - 1.50	2.00 - 2.00	2.60 - 2.60	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.30 - 2.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		03-Jul-2018			28-Jun-2018		03-Jul-2018	
Ammoniacal Nitrogen	02-Jul-2018	02-Jul-2018			29-Jun-2018	02-Jul-2018	29-Jun-2018	
Ammonium Soil by Titration	03-Jul-2018	03-Jul-2018	04-Jul-2018	06-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	06-Jul-2018
Anions by Kone (soil)		28-Jun-2018			28-Jun-2018		28-Jun-2018	
Asbestos ID in Solid Samples		02-Jul-2018			29-Jun-2018		29-Jun-2018	
Asbestos Quantification - Full		04-Jul-2018			04-Jul-2018			
Calorific Value (S)*	11-Jul-2018	10-Jul-2018	11-Jul-2018	10-Jul-2018	10-Jul-2018	13-Jul-2018	10-Jul-2018	10-Jul-2018
CEN 10:1 Leachate (1 Stage)	28-Jun-2018	28-Jun-2018			27-Jun-2018	28-Jun-2018	27-Jun-2018	
CEN Readings	30-Jun-2018	30-Jun-2018			28-Jun-2018	30-Jun-2018	30-Jun-2018	
Cyanide Comp/Free/Total/Thiocyanate	03-Jul-2018	03-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018
Dissolved Metals by ICP-MS	04-Jul-2018	04-Jul-2018			12-Jul-2018	04-Jul-2018	04-Jul-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	01-Jul-2018	01-Jul-2018			03-Jul-2018	01-Jul-2018	03-Jul-2018	
EPH CWG (Aliphatic) GC (S)	29-Jun-2018	28-Jun-2018	04-Jul-2018	05-Jul-2018	29-Jun-2018	29-Jun-2018	30-Jun-2018	04-Jul-2018
EPH CWG (Aromatic) Aqueous GC (W)	01-Jul-2018	01-Jul-2018			03-Jul-2018	01-Jul-2018	03-Jul-2018	
EPH CWG (Aromatic) GC (S)	29-Jun-2018	29-Jun-2018	04-Jul-2018	05-Jul-2018	29-Jun-2018	29-Jun-2018	30-Jun-2018	04-Jul-2018
GRO by GC-FID (S)	29-Jun-2018	29-Jun-2018	03-Jul-2018	04-Jul-2018	29-Jun-2018	30-Jun-2018	29-Jun-2018	04-Jul-2018
GRO by GC-FID (W)	02-Jul-2018	02-Jul-2018			02-Jul-2018	02-Jul-2018	02-Jul-2018	
Mercury Dissolved	03-Jul-2018	03-Jul-2018			03-Jul-2018	03-Jul-2018	03-Jul-2018	
Metals in solid samples by OES	29-Jun-2018	29-Jun-2018	06-Jul-2018	05-Jul-2018	29-Jun-2018	29-Jun-2018	29-Jun-2018	05-Jul-2018
PAH by GCMS	28-Jun-2018	28-Jun-2018	05-Jul-2018	03-Jul-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	03-Jul-2018
PAH Spec MS - Aqueous (W)	02-Jul-2018	02-Jul-2018			02-Jul-2018	02-Jul-2018	02-Jul-2018	
pH	01-Jul-2018	01-Jul-2018	04-Jul-2018	03-Jul-2018	01-Jul-2018	29-Jun-2018	01-Jul-2018	03-Jul-2018
pH Value	02-Jul-2018	02-Jul-2018			02-Jul-2018	02-Jul-2018	02-Jul-2018	
Phenols by HPLC (S)	28-Jun-2018	28-Jun-2018	04-Jul-2018	04-Jul-2018	03-Jul-2018	02-Jul-2018	02-Jul-2018	04-Jul-2018
Sample description	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018	26-Jun-2018
Total Organic Carbon	28-Jun-2018	28-Jun-2018	03-Jul-2018	04-Jul-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	04-Jul-2018
Total Sulphate		02-Jul-2018			29-Jun-2018		29-Jun-2018	
Total Sulphur		28-Jun-2018			28-Jun-2018		28-Jun-2018	
TPH CWG (W)	02-Jul-2018	02-Jul-2018			03-Jul-2018	02-Jul-2018	03-Jul-2018	
TPH CWG GC (S)	29-Jun-2018	29-Jun-2018	04-Jul-2018	05-Jul-2018	29-Jun-2018	30-Jun-2018	30-Jun-2018	04-Jul-2018
VOC MS (S)	28-Jun-2018	28-Jun-2018	03-Jul-2018	03-Jul-2018	28-Jun-2018	28-Jun-2018	28-Jun-2018	03-Jul-2018

CERTIFICATE OF ANALYSIS

Work Order	: **PR1864464**	Issue Date	: 10-Jul-2018
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Facsimile	: ----	Facsimile	: +420 284 081 635
Project	: 180626-3	Page	: 1 of 3
Order number	: 180626-3	Date Samples Received	: 28-Jun-2018
C-O-C number	: ----	Quote number	: PR2018ALSAL-GB0004 (CZ-256-18-0022)
Site	: ----	Date of test	: 29-Jun-2018 - 10-Jul-2018
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.
The laboratory declares that the test results relate only to the listed samples.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2005

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

L 1163

Analytical Results

Sub-Matrix: SOIL	Client sample ID	17820741 40A-P11		17820397 40A-P11-V		17820359 40A-R11	
	Laboratory sample ID	PR1864464-001		PR1864464-002		PR1864464-003	
	Client sampling date / time	22-Jun-2018 00:00		22-Jun-2018 00:00		22-Jun-2018 00:00	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	<0.50	----	<0.50	----
Water Analytical M(ad)	I-WA-GR	0.50	%	1.08	± 36.8%	1.52	± 29.7%	1.05	± 37.5%
Water Gross M(ex)	I-WG-GR	0.50	%	9.31	± 20.3%	33.0	± 20.0%	6.72	± 20.6%
Water Total M(ar)	I-WT-CC	0.50	%	10.3	----	34.0	----	7.70	----

Sub-Matrix: SOIL	Client sample ID	17820469 40A-R11		17820699 40A-R11		17820502 40A-R11-V	
	Laboratory sample ID	PR1864464-004		PR1864464-005		PR1864464-006	
	Client sampling date / time	22-Jun-2018 00:00		22-Jun-2018 00:00		22-Jun-2018 00:00	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	<0.50	----	<0.50	----
Water Analytical M(ad)	I-WA-GR	0.50	%	0.60	± 58.8%	<0.50	----	1.53	± 29.5%
Water Gross M(ex)	I-WG-GR	0.50	%	12.6	± 20.2%	15.2	± 20.1%	37.4	± 20.0%
Water Total M(ar)	I-WT-CC	0.50	%	13.2	----	15.2	----	38.4	----

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, delivery date in brackets without a time component will be displayed instead. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.
Key: LOR = Limit of reporting; MU = Measurement Uncertainty

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN ISO 18125, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3, CSN P CEN/TS 16023) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.

Preparation Methods	Method Descriptions

Preparation Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN 14918, CSN EN 15400, CSN EN 15170) Determination of gross calorific value by calorimetric method and calculation of net calorific value.
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.
The calculation methods of summation parameters are available on request in the client service.

CERTIFICATE OF ANALYSIS

Work Order	: **PR1864468**	Issue Date	: 11-Jul-2018
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Facsimile	: ----	Facsimile	: +420 284 081 635
Project	: 180626-3	Page	: 1 of 4
Order number	: 180626-3	Date Samples Received	: 28-Jun-2018
C-O-C number	: ----	Quote number	: PR2018ALSAL-GB0004 (CZ-256-18-0022)
Site	: ----	Date of test	: 29-Jun-2018 - 11-Jul-2018
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.
The laboratory declares that the test results relate only to the listed samples.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2005

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

L 1163

Analytical Results

Sub-Matrix: SOIL	Client sample ID	17819734 40A-K15-V		17819012 40A-L17		17818901 40A-L17	
	Laboratory sample ID	PR1864468-001		PR1864468-002		PR1864468-003	
	Client sampling date / time	22-Jun-2018 00:00		22-Jun-2018 00:00		22-Jun-2018 00:00	
Parameter	Method / LOR / Unit	Result	MU	Result	MU	Result	MU
Physical Parameters							
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS / 0.50 / MJ/kg DW	3.64	± 13.6%	<0.50	----	<0.50	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS / 0.50 / MJ/kg	1.91	± 20.1%	<0.50	----	<0.50	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS / 0.50 / MJ/kg DW	3.20	± 14.4%	<0.50	----	<0.50	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS / 0.50 / MJ/kg	0.59	± 57.7%	<0.50	----	<0.50	----
Water Analytical M(ad)	I-WA-GR / 0.50 / %	3.37	± 22.3%	1.06	± 37.3%	1.11	± 36.1%
Water Gross M(ex)	I-WG-GR / 0.50 / %	45.7	± 20.0%	11.3	± 20.2%	10.6	± 20.2%
Water Total M(ar)	I-WT-CC / 0.50 / %	47.5	----	12.2	----	11.6	----

Sub-Matrix: SOIL	Client sample ID	17820029 40A-L17-V		17820248 40A-N11		17820982 40A-N11	
	Laboratory sample ID	PR1864468-004		PR1864468-005		PR1864468-006	
	Client sampling date / time	22-Jun-2018 00:00		22-Jun-2018 00:00		22-Jun-2018 00:00	
Parameter	Method / LOR / Unit	Result	MU	Result	MU	Result	MU
Physical Parameters							
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS / 0.50 / MJ/kg DW	3.79	± 13.3%	<0.50	----	<0.50	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS / 0.50 / MJ/kg	1.87	± 20.4%	<0.50	----	<0.50	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS / 0.50 / MJ/kg DW	3.40	± 14.0%	<0.50	----	<0.50	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS / 0.50 / MJ/kg	0.50	± 67.4%	<0.50	----	<0.50	----
Water Analytical M(ad)	I-WA-GR / 0.50 / %	3.20	± 22.6%	1.02	± 38.4%	0.71	± 51.0%
Water Gross M(ex)	I-WG-GR / 0.50 / %	49.2	± 20.0%	6.42	± 20.7%	9.43	± 20.3%
Water Total M(ar)	I-WT-CC / 0.50 / %	50.8	----	7.37	----	10.1	----

Sub-Matrix: SOIL	Client sample ID	17820974 40A-N11		17820295 40A-N11-V		17821021 40A-P10	
	Laboratory sample ID	PR1864468-007		PR1864468-008		PR1864468-009	
	Client sampling date / time	22-Jun-2018 00:00		22-Jun-2018 00:00		22-Jun-2018 00:00	
Parameter	Method / LOR / Unit	Result	MU	Result	MU	Result	MU
Physical Parameters							
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS / 0.50 / MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS / 0.50 / MJ/kg	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS / 0.50 / MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS / 0.50 / MJ/kg	<0.50	----	<0.50	----	<0.50	----
Water Analytical M(ad)	I-WA-GR / 0.50 / %	0.77	± 47.5%	1.68	± 28.1%	0.56	± 62.8%
Water Gross M(ex)	I-WG-GR / 0.50 / %	8.64	± 20.4%	30.2	± 20.0%	9.24	± 20.3%
Water Total M(ar)	I-WT-CC / 0.50 / %	9.34	----	31.4	----	9.75	----

Sub-Matrix: SOIL	Client sample ID	17821001 40A-P10	17819372 40A-P10	17819448 40A-P10
	Laboratory sample ID	PR1864468-010	PR1864468-011	PR1864468-012
	Client sampling date / time	22-Jun-2018 00:00	22-Jun-2018 00:00	22-Jun-2018 00:00

Sub-Matrix: SOIL				Client sample ID	17821001 40A-P10		17819372 40A-P10		17819448 40A-P10	
				Laboratory sample ID	PR1864468-010		PR1864468-011		PR1864468-012	
				Client sampling date / time	22-Jun-2018 00:00		22-Jun-2018 00:00		22-Jun-2018 00:00	
Parameter	*Method*	*LOR*	*Unit*	**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	<0.50	----	<0.50	----
Water Analytical M(ad)	I-WA-GR	0.50	%	**1.08**	± 36.6%	**1.22**	± 33.8%	**1.14**	± 35.5%
Water Gross M(ex)	I-WG-GR	0.50	%	**8.91**	± 20.3%	**8.99**	± 20.3%	**8.46**	± 20.4%
Water Total M(ar)	I-WT-CC	0.50	%	**9.90**	----	**10.1**	----	**9.50**	----

Sub-Matrix: SOIL				Client sample ID	17820988 40A-P10-V		17820655 40A-P11		17820567 40A-P11	
				Laboratory sample ID	PR1864468-013		PR1864468-014		PR1864468-015	
				Client sampling date / time	22-Jun-2018 00:00		22-Jun-2018 00:00		22-Jun-2018 00:00	
Parameter	*Method*	*LOR*	*Unit*	**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	<0.50	----	<0.50	----
Water Analytical M(ad)	I-WA-GR	0.50	%	**1.98**	± 26.1%	**1.13**	± 35.6%	**1.09**	± 36.4%
Water Gross M(ex)	I-WG-GR	0.50	%	**33.9**	± 20.0%	**9.77**	± 20.3%	**9.61**	± 20.3%
Water Total M(ar)	I-WT-CC	0.50	%	**35.2**	----	**10.8**	----	**10.6**	----

Sub-Matrix: SOIL				Client sample ID	17820610 40A-P11		----		----	
				Laboratory sample ID	PR1864468-016		----		----	
				Client sampling date / time	22-Jun-2018 00:00		----		----	
Parameter	*Method*	*LOR*	*Unit*	**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	----	----	----	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	----	----	----	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	----	----	----	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	----	----	----	----
Water Analytical M(ad)	I-WA-GR	0.50	%	**1.12**	± 35.9%	----	----	----	----
Water Gross M(ex)	I-WG-GR	0.50	%	**9.79**	± 20.3%	----	----	----	----
Water Total M(ar)	I-WT-CC	0.50	%	**10.8**	----	----	----	----	----

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, delivery date in brackets without a time component will be displayed instead. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.
Key: LOR = Limit of reporting; MU = Measurement Uncertainty

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN ISO 18125, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3, CSN P CEN/TS 16023) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.

Preparation Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN 14918, CSN EN 15400, CSN EN 15170) Determination of gross calorific value by calorimetric method and calculation of net calorific value.
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.
The calculation methods of summation parameters are available on request in the client service.

CERTIFICATE OF ANALYSIS

Work Order	: **PR1864472**	Issue Date	: 13-Jul-2018
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Facsimile	: ----	Facsimile	: +420 284 081 635
Project	: 180626-3	Page	: 1 of 4
Order number	: 180626-3	Date Samples Received	: 28-Jun-2018
C-O-C number	: ----	Quote number	: PR2018ALSAL-GB0001 (CZ-256-17-1008)
Site	: ----	Date of test	: 29-Jun-2018 - 13-Jul-2018
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.
The laboratory declares that the test results relate only to the listed samples.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2005

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

Analytical Results

Sub-Matrix: SOIL	Client sample ID	17817099 40A-H10		17820326 40A-H10		17820195 40A-H10	
	Laboratory sample ID	PR1864472-001		PR1864472-002		PR1864472-003	
	Client sampling date / time	22-Jun-2018 00:00		22-Jun-2018 00:00		22-Jun-2018 00:00	
Parameter	Method / LOR / Unit	Result	MU	Result	MU	Result	MU
Physical Parameters							
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS / 0.50 / MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS / 0.50 / MJ/kg	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS / 0.50 / MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS / 0.50 / MJ/kg	<0.50	----	<0.50	----	<0.50	----
Water Analytical M(ad)	I-WA-GR / 0.50 / %	0.90	± 42.0%	2.33	± 24.6%	0.71	± 51.2%
Water Gross M(ex)	I-WG-GR / 0.50 / %	5.64	± 20.8%	7.21	± 20.5%	8.28	± 20.4%
Water Total M(ar)	I-WT-CC / 0.50 / %	6.49	----	9.38	----	8.93	----

Sub-Matrix: SOIL	Client sample ID	17819973 40A-H10-V		17819989 40A-J10		17820040 40A-J10	
	Laboratory sample ID	PR1864472-004		PR1864472-005		PR1864472-006	
	Client sampling date / time	22-Jun-2018 00:00		22-Jun-2018 00:00		22-Jun-2018 00:00	
Parameter	Method / LOR / Unit	Result	MU	Result	MU	Result	MU
Physical Parameters							
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS / 0.50 / MJ/kg DW	6.31	± 11.3%	<0.50	----	<0.50	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS / 0.50 / MJ/kg	2.55	± 16.4%	<0.50	----	<0.50	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS / 0.50 / MJ/kg DW	5.83	± 11.5%	<0.50	----	<0.50	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS / 0.50 / MJ/kg	0.98	± 35.4%	<0.50	----	<0.50	----
Water Analytical M(ad)	I-WA-GR / 0.50 / %	3.19	± 22.6%	0.78	± 47.4%	0.96	± 40.0%
Water Gross M(ex)	I-WG-GR / 0.50 / %	58.2	± 20.0%	9.41	± 20.3%	8.79	± 20.4%
Water Total M(ar)	I-WT-CC / 0.50 / %	59.6	----	10.1	----	9.67	----

Sub-Matrix: SOIL	Client sample ID	17819095 40A-J10		17819841 40A-J10-V		17819923 40A-K11	
	Laboratory sample ID	PR1864472-007		PR1864472-008		PR1864472-009	
	Client sampling date / time	22-Jun-2018 00:00		22-Jun-2018 00:00		22-Jun-2018 00:00	
Parameter	Method / LOR / Unit	Result	MU	Result	MU	Result	MU
Physical Parameters							
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS / 0.50 / MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS / 0.50 / MJ/kg	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS / 0.50 / MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS / 0.50 / MJ/kg	<0.50	----	<0.50	----	<0.50	----
Water Analytical M(ad)	I-WA-GR / 0.50 / %	0.76	± 48.3%	2.69	± 23.5%	1.39	± 31.2%
Water Gross M(ex)	I-WG-GR / 0.50 / %	11.7	± 20.2%	51.7	± 20.0%	9.11	± 20.3%
Water Total M(ar)	I-WT-CC / 0.50 / %	12.3	----	53.0	----	10.4	----

Sub-Matrix: SOIL	Client sample ID	17819532 40A-K11	17819408 40A-K11	17819304 40A-K11-V
	Laboratory sample ID	PR1864472-010	PR1864472-011	PR1864472-012
	Client sampling date / time	22-Jun-2018 00:00	22-Jun-2018 00:00	22-Jun-2018 00:00

Sub-Matrix: SOIL				Client sample ID	17819532 40A-K11		17819408 40A-K11		17819304 40A-K11-V	
				Laboratory sample ID	PR1864472-010		PR1864472-011		PR1864472-012	
				Client sampling date / time	22-Jun-2018 00:00		22-Jun-2018 00:00		22-Jun-2018 00:00	
Parameter	*Method*	*LOR*	*Unit*	**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	<0.50	----	<0.50	----
Water Analytical M(ad)	I-WA-GR	0.50	%	**1.31**	± 32.3%	**1.21**	± 34.0%	**1.97**	± 26.2%
Water Gross M(ex)	I-WG-GR	0.50	%	**10.0**	± 20.3%	**8.96**	± 20.3%	**39.8**	± 20.0%
Water Total M(ar)	I-WT-CC	0.50	%	**11.2**	----	**10.1**	----	**40.9**	----

Sub-Matrix: SOIL				Client sample ID	17817225 40A-K13		17817331 40A-K13		17817149 40A-K13	
				Laboratory sample ID	PR1864472-013		PR1864472-014		PR1864472-015	
				Client sampling date / time	22-Jun-2018 00:00		22-Jun-2018 00:00		22-Jun-2018 00:00	
Parameter	*Method*	*LOR*	*Unit*	**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	<0.50	----	<0.50	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	<0.50	----	<0.50	----
Water Analytical M(ad)	I-WA-GR	0.50	%	**1.71**	± 28.0%	**1.10**	± 36.4%	**1.31**	± 32.4%
Water Gross M(ex)	I-WG-GR	0.50	%	**6.14**	± 20.7%	**9.67**	± 20.3%	**12.8**	± 20.2%
Water Total M(ar)	I-WT-CC	0.50	%	**7.74**	----	**10.7**	----	**13.9**	----

Sub-Matrix: SOIL				Client sample ID	17819236 40A-K15		----		----	
				Laboratory sample ID	PR1864472-016		----		----	
				Client sampling date / time	22-Jun-2018 00:00		----		----	
Parameter	*Method*	*LOR*	*Unit*	**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	----	----	----	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	----	----	----	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	<0.50	----	----	----	----	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	<0.50	----	----	----	----	----
Water Analytical M(ad)	I-WA-GR	0.50	%	<0.50	----	----	----	----	----
Water Gross M(ex)	I-WG-GR	0.50	%	**8.44**	± 20.4%	----	----	----	----
Water Total M(ar)	I-WT-CC	0.50	%	**8.44**	----	----	----	----	----

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, delivery date in brackets without a time component will be displayed instead. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.
Key: LOR = Limit of reporting; MU = Measurement Uncertainty

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN ISO 18125, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3, CSN P CEN/TS 16023) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.

Preparation Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN 14918, CSN EN 15400, CSN EN 15170) Determination of gross calorific value by calorimetric method and calculation of net calorific value.
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.
The calculation methods of summation parameters are available on request in the client service.

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Fax: (01244) 528701
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Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	12 July 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180629-96
Your Reference:	
Location:	Llanwern
Report No:	464053

This report has been revised and directly supersedes 463775 in its entirety.

We received 34 samples on Friday June 29, 2018 and 34 of these samples were scheduled for analysis which was completed on Wednesday July 11, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17844959	40A-D11		0.50 - 0.50	28/06/2018
17844964	40A-D11		2.60 - 2.60	28/06/2018
17844968	40A-D11-V		0.00 - 0.00	28/06/2018
17844931	40A-F12		0.50 - 0.50	28/06/2018
17844954	40A-F12		1.00 - 1.00	28/06/2018
17844936	40A-F12		2.30 - 2.30	28/06/2018
17844950	40A-F12-V		1.70 - 1.70	28/06/2018
17844925	40A-G12		1.00 - 1.00	28/06/2018
17844908	40A-G15		0.70 - 0.70	28/06/2018
17844916	40A-G15		1.70 - 1.70	28/06/2018
17844894	40A-G16		0.50 - 0.50	28/06/2018
17844890	40A-G16		2.00 - 2.00	28/06/2018
17844876	40A-G17		0.50 - 0.50	28/06/2018
17844870	40A-G17		3.30 - 3.30	28/06/2018
17844920	40A-G15-V		3.20 - 3.20	28/06/2018
17844898	40A-G16-V		0.90 - 0.90	28/06/2018
17844885	40A-G17-V		1.00 - 1.00	28/06/2018
17844995	40A-H14		0.50 - 0.50	28/06/2018
17845004	40A-H14		1.00 - 1.00	28/06/2018
17844817	40A-H14-V		1.30 - 1.30	28/06/2018
17844840	40A-I15		1.50 - 1.50	28/06/2018
17844846	40A-I15		2.70 - 2.70	28/06/2018
17844826	40A-I16		0.50 - 0.50	28/06/2018
17844856	40A-I17		1.00 - 1.00	28/06/2018
17844863	40A-I18		2.00 - 2.00	28/06/2018
17844851	40A-I15-V		0.40 - 0.40	28/06/2018
17844833	40A-I16-V		1.00 - 1.00	28/06/2018
17844810	40A-J14		0.50 - 0.50	28/06/2018
17844881	40A-J14		1.00 - 1.00	28/06/2018
17844986	40A-JK16		0.50 - 0.50	28/06/2018
17844990	40A-JK16-V		1.50 - 1.50	28/06/2018
17844943	40A-J14-V		1.20 - 1.20	28/06/2018
17844973	40A-L15		0.50 - 0.50	28/06/2018
17844981	40A-L15-V		1.00 - 1.00	28/06/2018

Maximum Sample/Coolbox Temperature (°C) : **15.4**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	17844959			17844964			17844968		17844931			17844954			17844936			17844950	
			Customer Sample Reference	40A-D11			40A-D11			40A-D11-V		40A-F12			40A-F12			40A-F12			40A-F12-V	
			AGS Reference																			
			Depth (m)	0.50 - 0.50			2.60 - 2.60			0.00 - 0.00		0.50 - 0.50			1.00 - 1.00			2.30 - 2.30			1.70 - 1.70	
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 16			X											X			X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 23		X			X					X			X			X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 34			X			X		X			X			X			X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 16			X											X			X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16		X											X			X				
CEN Readings	All	NDPs: 0 Tests: 23		X			X					X			X			X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 57		X	X		X	X		X		X	X		X	X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 23		X			X					X			X			X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 23		X			X					X			X			X				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 34			X			X		X			X			X			X		X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 23		X			X					X			X			X				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 34			X			X		X			X			X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 34				X			X		X			X			X				X		X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 23		X			X					X			X			X				
Mercury Dissolved	All	NDPs: 0 Tests: 23		X			X					X			X			X				

17844870	40A-G17		3.30 - 3.30	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X	
17844876	40A-G17		0.50 - 0.50	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X	
17844890	40A-G16		2.00 - 2.00	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X	
17844894	40A-G16		0.50 - 0.50	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X	
17844916	40A-G15		1.70 - 1.70	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X	
17844908	40A-G15		0.70 - 0.70	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X	
17844925	40A-G12		1.00 - 1.00	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X	

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
Metals in solid samples by OES	All	NDPs: 0 Tests: 34	17844959	40A-D11		0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844964	40A-D11		2.60 - 2.60	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844968	40A-D11-V		0.00 - 0.00	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844931	40A-F12		0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844954	40A-F12		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844936	40A-F12		2.30 - 2.30	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844950	40A-F12-V		1.70 - 1.70	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
PAH by GCMS	All	NDPs: 0 Tests: 34		X				X		X			X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 23	X			X				X			X			X							
pH	All	NDPs: 0 Tests: 34		X			X		X			X			X			X			X			X	
pH Value	All	NDPs: 0 Tests: 23	X			X				X			X			X							
Phenols by HPLC (S)	All	NDPs: 0 Tests: 34		X			X		X			X			X			X			X			X	
Sample description	All	NDPs: 0 Tests: 34		X			X		X			X			X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 34		X			X		X			X			X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 16		X											X						X				
Total Sulphur	All	NDPs: 0 Tests: 16		X											X						X				
TPH CWG (W)	All	NDPs: 0 Tests: 23	X			X				X			X			X									
TPH CWG GC (S)	All	NDPs: 0 Tests: 34		X			X		X			X			X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 34			X			X		X			X			X			X			X			X

| 17844870 | 40A-G17 | | 3.30 - 3.30 | 60g VOC (ALE215) | | |

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			17844920	40A-G15-V		3.20 - 3.20	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844898	40A-G16-V		0.90 - 0.90	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844885	40A-G17-V		1.00 - 1.00	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844995	40A-H14		0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17845004	40A-H14		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844817	40A-H14-V		1.30 - 1.30	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844840	40A-I15		1.50 - 1.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844846	40A-I15		2.70 - 2.70	1kg TUB	S
							250g Amber Jar (ALE210)	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 16						X								X		X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 23						X		X					X			X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 34	X		X		X			X			X		X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 16								X						X			X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16						X							X			X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2																		
CEN Readings	All	NDPs: 0 Tests: 23						X		X					X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 57	X		X		X		X	X		X	X		X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 23						X		X					X			X			
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 23						X		X					X			X			
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 34	X		X		X			X			X		X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 23						X		X					X			X			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 34	X		X		X			X			X		X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 34		X		X		X			X			X		X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 23						X			X					X			X			

17844986	40A-JK16		0.50 - 0.50	1kg TUB	S		X			X		X	X	X	X		X			X
17844881	40A-J14		1.00 - 1.00	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S			X					X			X		X		
				1kg TUB	S		X					X	X	X	X		X			X
17844810	40A-J14		0.50 - 0.50	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X		
				1kg TUB	S		X			X		X	X	X	X		X			X
17844833	40A-I16-V		1.00 - 1.00	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S			X					X			X		X		
17844851	40A-I15-V		0.40 - 0.40	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S			X					X			X		X		
17844863	40A-I18		2.00 - 2.00	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X		
				1kg TUB	S		X			X		X	X	X	X		X			X
17844856	40A-I17		1.00 - 1.00	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X		
				1kg TUB	S		X			X		X	X	X	X		X			X
17844826	40A-I16		0.50 - 0.50	60g VOC (ALE215)	S														X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X		
				1kg TUB	S		X			X	X	X	X	X	X		X			X
17844846	40A-I15		2.70 - 2.70	60g VOC (ALE215)	S														X	

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
Mercury Dissolved	All	NDPs: 0 Tests: 23	17844920	40A-G15-V		3.20 - 3.20	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844898	40A-G16-V		0.90 - 0.90	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844885	40A-G17-V		1.00 - 1.00	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844995	40A-H14		0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17845004	40A-H14		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844817	40A-H14-V		1.30 - 1.30	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844840	40A-I15		1.50 - 1.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17844846	40A-I15		2.70 - 2.70	1kg TUB	S
							250g Amber Jar (ALE210)	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 34	X		X		X		X		X		X		X		X		X		X
PAH by GCMS	All	NDPs: 0 Tests: 34	X		X		X		X		X		X		X		X		X		X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 23							X			X					X				X	
pH	All	NDPs: 0 Tests: 34	X		X		X		X		X		X		X		X		X		X
pH Value	All	NDPs: 0 Tests: 23							X			X					X				X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 34	X		X		X		X		X		X		X		X		X		X
Sample description	All	NDPs: 0 Tests: 34	X		X		X		X		X		X		X		X		X		X
Total Organic Carbon	All	NDPs: 0 Tests: 34	X		X		X		X		X		X		X		X		X		X
Total Sulphate	All	NDPs: 0 Tests: 16							X										X		X
Total Sulphur	All	NDPs: 0 Tests: 16							X										X		X
TPH CWG (W)	All	NDPs: 0 Tests: 23							X			X					X				X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 34	X		X		X		X		X		X		X		X		X		X
VOC MS (S)	All	NDPs: 0 Tests: 34		X		X		X				X				X		X				X	

17844986	40A-JK16		0.50 - 0.50	1kg TUB	S		x				x			x								
17844881	40A-J14		1.00 - 1.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S			x	x			x			x	x	x					x	
				1kg TUB	S		x				x			x								
17844810	40A-J14		0.50 - 0.50	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S			x	x			x			x	x	x	x	x			x	
				1kg TUB	S		x				x			x								
17844833	40A-I16-V		1.00 - 1.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S			x	x			x			x	x	x					x	
17844851	40A-I15-V		0.40 - 0.40	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S			x	x			x			x	x	x					x	
17844863	40A-I18		2.00 - 2.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S			x	x			x			x	x	x	x	x			x	
				1kg TUB	S		x				x			x								
17844856	40A-I17		1.00 - 1.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S			x	x			x			x	x	x	x	x			x	
				1kg TUB	S		x				x			x								
17844826	40A-I16		0.50 - 0.50	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S			x	x			x			x	x	x	x	x			x	
				1kg TUB	S		x				x			x								
17844846	40A-I15		2.70 - 2.70	60g VOC (ALE215)	S																	x

Validated

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17844986		17844990		17844943		17844973		17844981
Customer Sample Reference			40A-JK16		40A-JK16-V		40A-J14-V		40A-L15		40A-L15-V
AGS Reference											
Depth (m)			0.50 - 0.50		1.50 - 1.50		1.20 - 1.20		0.50 - 0.50		1.00 - 1.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 16	X							X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 23							X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 34	X		X		X			X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 16	X							X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16							X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2							X				
CEN Readings	All	NDPs: 0 Tests: 23							X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 57	X		X		X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 23							X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 23							X				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 34	X		X		X			X		X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 23							X				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 34	X		X		X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 34		X		X		X			X		X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 23							X				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17844986		17844990		17844943			17844973			17844981									
Customer Sample Reference			40A-JK16		40A-JK16-V		40A-J14-V			40A-L15			40A-L15-V									
AGS Reference																						
Depth (m)			0.50 - 0.50		1.50 - 1.50		1.20 - 1.20			0.50 - 0.50			1.00 - 1.00									
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)									
Sample Type			S	S	S	S	S	S	S	S	S	S	S									
Mercury Dissolved	All	NDPs: 0 Tests: 23							X													
Metals in solid samples by OES	All	NDPs: 0 Tests: 34	X		X		X			X		X										
PAH by GCMS	All	NDPs: 0 Tests: 34	X		X		X			X		X										
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 23							X													
pH	All	NDPs: 0 Tests: 34	X		X		X			X		X										
pH Value	All	NDPs: 0 Tests: 23							X													
Phenols by HPLC (S)	All	NDPs: 0 Tests: 34	X		X		X			X		X										
Sample description	All	NDPs: 0 Tests: 34	X		X		X			X		X										
Total Organic Carbon	All	NDPs: 0 Tests: 34	X		X		X			X		X										
Total Sulphate	All	NDPs: 0 Tests: 16	X							X												
Total Sulphur	All	NDPs: 0 Tests: 16	X							X												
TPH CWG (W)	All	NDPs: 0 Tests: 23							X													
TPH CWG GC (S)	All	NDPs: 0 Tests: 34	X		X		X			X		X										
VOC MS (S)	All	NDPs: 0 Tests: 34		X		X		X			X		X									

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17844959	40A-D11	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
17844964	40A-D11	2.60 - 2.60	Dark Brown	Sand	Stones	None
17844968	40A-D11-V	0.00 - 0.00	Dark Brown	Silty Clay Loam	Vegetation	Stones
17844931	40A-F12	0.50 - 0.50	Dark Brown	Silt Loam	Stones	Vegetation
17844936	40A-F12	2.30 - 2.30	Black	Sandy Silt Loam	Stones	None
17844954	40A-F12	1.00 - 1.00	Dark Brown	Sand	Stones	Crushed Brick
17844950	40A-F12-V	1.70 - 1.70	Dark Brown	Silt Loam	Vegetation	Stones
17844925	40A-G12	1.00 - 1.00	Dark Brown	Sand	Stones	Crushed Brick
17844908	40A-G15	0.70 - 0.70	Dark Brown	Sandy Silt Loam	Stones	Vegetation
17844916	40A-G15	1.70 - 1.70	Dark Brown	Sandy Silt Loam	Stones	Vegetation
17844890	40A-G16	2.00 - 2.00	Dark Brown	Sandy Clay	Crushed Brick	Stones
17844894	40A-G16	0.50 - 0.50	Dark Brown	Sandy Clay	Crushed Brick	Stones
17844870	40A-G17	3.30 - 3.30	Dark Brown	Stone/Soil	Stones	Vegetation
17844876	40A-G17	0.50 - 0.50	Dark Brown	Stone/Soil	Stones	Vegetation
17844920	40A-G15-V	3.20 - 3.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
17844898	40A-G16-V	0.90 - 0.90	Dark Brown	Sandy Clay Loam	Vegetation	None
17844885	40A-G17-V	1.00 - 1.00	Dark Brown	Silty Clay	None	None
17844995	40A-H14	0.50 - 0.50	Black	Sandy Silt Loam	Stones	None
17845004	40A-H14	1.00 - 1.00	Dark Brown	Loamy Sand	Vegetation	Stones
17844817	40A-H14-V	1.30 - 1.30	Dark Brown	Silty Clay Loam	Vegetation	None
17844840	40A-I15	1.50 - 1.50	Dark Brown	Sandy Silt Loam	Stones	Crushed Brick
17844846	40A-I15	2.70 - 2.70	Dark Brown	Sandy Silt Loam	Stones	Crushed Brick
17844826	40A-I16	0.50 - 0.50	Dark Brown	Silt Loam	Stones	Vegetation
17844856	40A-I17	1.00 - 1.00	Light Brown	Sand	Stones	None
17844863	40A-I18	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Vegetation
17844851	40A-I15-V	0.40 - 0.40	Dark Brown	Silt Loam	None	Vegetation
17844833	40A-I16-V	1.00 - 1.00	Dark Brown	Silty Clay	Vegetation	None
17844810	40A-J14	0.50 - 0.50	Black	Sand	Stones	None
17844881	40A-J14	1.00 - 1.00	Black	Sand	Stones	None
17844986	40A-JK16	0.50 - 0.50	Black	Sludge	Oil/Petroleum	Glass & Stones
17844990	40A-JK16-V	1.50 - 1.50	Dark Brown	Silty Clay	Vegetation	None
17844943	40A-J14-V	1.20 - 1.20	Dark Brown	Silt Loam	Vegetation	None
17844973	40A-L15	0.50 - 0.50	Black	Sand	Stones	None
17844981	40A-L15-V	1.00 - 1.00	Grey	Silty Clay	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D11	40A-D11	40A-D11-V	40A-F12	40A-F12	40A-F12
			Depth (m)	0.50 - 0.50	2.60 - 2.60	0.00 - 0.00	0.50 - 0.50	1.00 - 1.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844959	17844964	17844968	17844931	17844954	17844936
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.2	11	44	4.1	8.8	4.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	494 M	<12 M	51.2 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0105 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.018 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.315				0.433	0.372
Sulphate, Total potential	<0.06 %	TM132		0.945				1.3	1.12
Soil Organic Matter (SOM)	<0.35 %	TM132		8.98 #	2.48 #	8.45 #	3.55 #	2.26 #	14.2 #
pH	1 pH Units	TM133		9.47 M	8.64 M	6.86 M	10.6 M	10 M	10.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13.6 M	8.79 M	18.3 M	7.04 M	24.9 M	14.7 M
Cadmium	<0.02 mg/kg	TM181		0.642 M	0.634 M	0.21 M	<0.2 M	<0.02 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		26.6 M	123 M	38.4 M	229 M	66.7 M	<9 M
Copper	<1.4 mg/kg	TM181		24 M	15.1 M	28.4 M	26.2 M	12.2 M	22.1 M
Iron	<1000 mg/kg	TM181		55700 #	38800 #	22700 #	88100 #	38900 #	207000 #
Lead	<0.7 mg/kg	TM181		103 M	52.8 M	44.7 M	86.2 M	37 M	231 M
Manganese	<0.13 mg/kg	TM181		3510 M	7490 M	182 M	7300 M	6170 M	5310 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		15.3 M	12.9 M	26.9 M	17.4 M	12.4 M	20.5 M
Selenium	<1 mg/kg	TM181		1.83 #	3.28 #	<1 #	<10 #	3 #	<10 #
Vanadium	<0.2 mg/kg	TM181		60.5 #	307 #	54.2 #	140 #	143 #	84.9 #
Zinc	<1.9 mg/kg	TM181		277 M	121 M	148 M	207 M	121 M	449 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.241				0.596	0.863
Calcium	<21 mg/kg	TM224		129000				138000	100000
Magnesium	<8 mg/kg	TM224		21200				16700	14000
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.212 M				0.124 M	0.207 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-F12-V	40A-G12	40A-G15	40A-G15	40A-G16	40A-G16
			Depth (m)	1.70 - 1.70	1.00 - 1.00	0.70 - 0.70	1.70 - 1.70	0.50 - 0.50	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844950	17844925	17844908	17844916	17844894	17844890
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		44	6.4	9.5	9.9	9.8	7.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		797 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.15 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.018 M	0.0107 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.16 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.544		0.148	0.189	
Sulphate, Total potential	<0.06 %	TM132			1.63		0.444	0.567	
Soil Organic Matter (SOM)	<0.35 %	TM132		12.7 #	3.62 #	3.03 #	2.71 #	7.46 #	3.65 #
pH	1 pH Units	TM133		6.82 M	11.7 M	8.05 M	7.74 M	8.05 M	8.25 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		20 M	15.3 M	7.27 M	5.48 M	13 M	9.92 M
Cadmium	<0.02 mg/kg	TM181		0.575 M	<0.2 M	0.0465 M	0.0283 M	0.0736 M	0.0259 M
Chromium	<0.9 mg/kg	TM181		37.7 M	73.1 M	10.3 M	6.13 M	4.54 M	7.94 M
Copper	<1.4 mg/kg	TM181		29.6 M	34.4 M	22.6 M	10.4 M	22.6 M	22.5 M
Iron	<1000 mg/kg	TM181		23500 #	106000 #	22200 #	16500 #	19500 #	22100 #
Lead	<0.7 mg/kg	TM181		50.9 M	54.5 M	19.5 M	15.1 M	24 M	33.1 M
Manganese	<0.13 mg/kg	TM181		313 M	6600 M	412 M	1120 M	771 M	994 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		29.3 M	22.7 M	23.8 M	11.6 M	18.2 M	28.5 M
Selenium	<1 mg/kg	TM181		<1 #	<10 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		63.4 #	74.7 #	20.4 #	15.9 #	16.3 #	27.5 #
Zinc	<1.9 mg/kg	TM181		166 M	208 M	73.7 M	59.4 M	77 M	93.9 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.722		0.102	0.119	
Calcium	<21 mg/kg	TM224			163000		178000	64000	
Magnesium	<8 mg/kg	TM224			23000		18200	12500	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.391 M		0.0406 M	0.0966 M	

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G17	40A-G17	40A-G15-V	40A-G16-V	40A-G17-V	40A-H14
			Depth (m)	0.50 - 0.50	3.30 - 3.30	3.20 - 3.20	0.90 - 0.90	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844876	17844870	17844920	17844898	17844885	17844995
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	11	43	40	29	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 #	415 M	347 M	253 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.0952				0.245
Sulphate, Total potential	<0.06 %	TM132			0.286				0.735
Soil Organic Matter (SOM)	<0.35 %	TM132		2.22 #	1.79 #	11.2 #	7.91 #	4.03 #	7.34 #
pH	1 pH Units	TM133		8.51 #	8.49 #	6.91 M	6.75 M	7.01 M	11.9 M
Cyanide, Total	<1 mg/kg	TM153		3.28 #	2.33 #	<1 M	<1 M	<1 M	5.29 M
Arsenic	<0.6 mg/kg	TM181		5.96 #	6.16 #	17.6 M	18.1 M	11 M	17.6 M
Cadmium	<0.02 mg/kg	TM181		0.182 #	<0.02 #	0.415 M	0.0501 M	<0.02 M	1.24 M
Chromium	<0.9 mg/kg	TM181		4.66 #	4.27 #	36.4 M	35.6 M	38.7 M	77 M
Copper	<1.4 mg/kg	TM181		17 #	16.4 #	28.7 M	28.2 M	28.2 M	37 M
Iron	<1000 mg/kg	TM181		23300 #	30500 #	23300 #	25700 #	24400 #	145000 #
Lead	<0.7 mg/kg	TM181		17.7 #	14.7 #	43 M	37.6 M	23 M	360 M
Manganese	<0.13 mg/kg	TM181		500 #	667 #	239 M	161 M	280 M	4970 M
Mercury	<0.14 mg/kg	TM181		<0.14 #	<0.14 #	<0.14 M	<0.14 M	<0.14 M	<14 M
Nickel	<0.2 mg/kg	TM181		14.5 #	13.8 #	28 M	29.5 M	40.9 M	29.9 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		13.7 #	19 #	57.9 #	55.1 #	58.1 #	90.4 #
Zinc	<1.9 mg/kg	TM181		49.4 #	39.9 #	151 M	132 M	112 M	2070 M
Sulphate, acid soluble (total)	<0.02 %	TM221			<0.02				0.418
Calcium	<21 mg/kg	TM224			31300				136000
Magnesium	<8 mg/kg	TM224			4230				14800
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0322 #				0.134 M

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H14	40A-H14-V	40A-I15	40A-I15	40A-I16	40A-I17
			Depth (m)	1.00 - 1.00	1.30 - 1.30	1.50 - 1.50	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17845004	17844817	17844840	17844846	17844826	17844856
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	33	8.9	8.8	12	6.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	275 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.142	0.15	0.311	0.197
Sulphate, Total potential	<0.06 %	TM132				0.426	0.45	0.933	0.591
Soil Organic Matter (SOM)	<0.35 %	TM132		0.679 #	5.09 #	5.41 #	4.12 #	2.93 #	1.74 #
pH	1 pH Units	TM133		7.68 M	6.87 M	11.1 M	10.9 M	8.67 M	11.1 M
Cyanide, Total	<1 mg/kg	TM153		2.94 M	<1 M	2.29 M	<1 M	3.53 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13.1 M	12.7 M	10.8 M	9.79 M	9.16 M	7.24 M
Cadmium	<0.02 mg/kg	TM181		0.101 M	<0.02 M	0.146 M	0.164 M	0.282 M	0.0692 M
Chromium	<0.9 mg/kg	TM181		5.24 M	39.4 M	6.69 M	11 M	12.8 M	6.19 M
Copper	<1.4 mg/kg	TM181		14.1 M	31.8 M	20.2 M	14.7 M	15.8 M	9 M
Iron	<1000 mg/kg	TM181		24400 #	21500 #	35400 #	26500 #	18400 #	12000 #
Lead	<0.7 mg/kg	TM181		24.7 M	22.2 M	88.5 M	30.1 M	47 M	9.67 M
Manganese	<0.13 mg/kg	TM181		823 M	368 M	1100 M	2140 M	1950 M	414 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		21.7 M	42.7 M	17.1 M	17 M	15.1 M	9.88 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	1.3 #	1.01 #	<1 #
Vanadium	<0.2 mg/kg	TM181		19.4 #	57.2 #	25.9 #	31.2 #	54.1 #	15.2 #
Zinc	<1.9 mg/kg	TM181		97.2 M	102 M	337 M	177 M	267 M	46 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.306	0.265	0.56	0.367
Calcium	<21 mg/kg	TM224				73600	58200	117000	216000
Magnesium	<8 mg/kg	TM224				7090	7180	13100	11800
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.0947 M	0.143 M	0.128 M	0.491 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						N/C	
Asbestos Quantification - Total - %	<0.001 %	TM304						0.0012 #	

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-I18	40A-I15-V	40A-I16-V	40A-J14	40A-J14	40A-JK16
			Depth (m)	2.00 - 2.00	0.40 - 0.40	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844863	17844851	17844833	17844810	17844881	17844986
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		16	34	26	12	12	35
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	366 M	238 M	<12 M	19.5 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Cresols	<0.01 mg/kg	TM062 (S)		0.0119 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.0465 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 #
Sulphur, Total	<0.02 %	TM132		0.106			0.22		0.883
Sulphate, Total potential	<0.06 %	TM132		0.318			0.66		2.65
Soil Organic Matter (SOM)	<0.35 %	TM132		2.88 #	6.12 #	1.69 #	2.19 #	7.21 #	4.19 #
pH	1 pH Units	TM133		8.15 M	7.08 M	7.4 M	11.8 M	11.1 M	8.19 #
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	1.68 M	63.4 M	93.4 #
Arsenic	<0.6 mg/kg	TM181		9.79 M	14.6 M	11.5 M	29.8 M	8.73 M	7.36 #
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 M	0.0817 M	0.228 #
Chromium	<0.9 mg/kg	TM181		16 M	39.2 M	35.2 M	24.3 M	14.2 M	15.3 #
Copper	<1.4 mg/kg	TM181		22.6 M	29.9 M	16.5 M	37.4 M	29.3 M	16.3 #
Iron	<1000 mg/kg	TM181		29100 #	25500 #	32100 #	45500 #	14300 #	19800 #
Lead	<0.7 mg/kg	TM181		25.2 M	26.6 M	25.9 M	40.1 M	21.4 M	31.6 #
Manganese	<0.13 mg/kg	TM181		1720 M	260 M	485 M	7200 M	530 M	2870 #
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 #
Nickel	<0.2 mg/kg	TM181		19.8 M	33.4 M	40.4 M	14.3 M	23.8 M	13.4 #
Selenium	<1 mg/kg	TM181		1.38 #	<1 #	<1 #	2.98 #	<10 #	2.54 #
Vanadium	<0.2 mg/kg	TM181		34.2 #	60.9 #	57.7 #	50.4 #	30.1 #	38.3 #
Zinc	<1.9 mg/kg	TM181		76.1 M	110 M	109 M	197 M	91.8 M	126 #
Sulphate, acid soluble (total)	<0.02 %	TM221		0.121			0.364		1.97
Calcium	<21 mg/kg	TM224		74800			171000		112000
Magnesium	<8 mg/kg	TM224		16100			12000		31400
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.147 M			0.186 M		0.291 #

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-JK16-V	40A-J14-V	40A-L15	40A-L15-V		
			Depth (m)	1.50 - 1.50	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018		
			SDG Ref	180629-96	180629-96	180629-96	180629-96		
			Lab Sample No.(s)	17844990	17844943	17844973	17844981		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		38	83	8.9	27		
Exchangeable Ammonia as N	<12 mg/kg	TM024		219 M	257 M	<12 M	206 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M		
Sulphur, Total	<0.02 %	TM132				0.158			
Sulphate, Total potential	<0.06 %	TM132				0.474			
Soil Organic Matter (SOM)	<0.35 %	TM132		8.07 #	57.6 #	3.05 #	2.16 #		
pH	1 pH Units	TM133		7.06 M	7.23 M	8.5 M	7.4 M		
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.74 M	4.25 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		16.6 M	11.2 M	13.2 M	10.2 M		
Cadmium	<0.02 mg/kg	TM181		0.362 M	<0.02 M	0.0366 M	<0.02 M		
Chromium	<0.9 mg/kg	TM181		34.6 M	8.88 M	5.64 M	35.8 M		
Copper	<1.4 mg/kg	TM181		25.9 M	12.7 M	14.7 M	16.2 M		
Iron	<1000 mg/kg	TM181		24900 #	19100 #	18500 #	29700 #		
Lead	<0.7 mg/kg	TM181		35.8 M	5.23 M	31.1 M	23.7 M		
Manganese	<0.13 mg/kg	TM181		207 M	411 M	619 M	394 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		34.2 M	21.5 M	17 M	38.5 M		
Selenium	<1 mg/kg	TM181		<1 #	2.34 #	<1 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		55.1 #	20.7 #	21.7 #	57.5 #		
Zinc	<1.9 mg/kg	TM181		150 M	20.6 M	55.6 M	105 M		
Sulphate, acid soluble (total)	<0.02 %	TM221				0.113			
Calcium	<21 mg/kg	TM224				40500			
Magnesium	<8 mg/kg	TM224				2370			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.0377 M			
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				<0.001 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #			
Additional Asbestos Components (Using TM048)		TM304				None #			
Analysts Comments		TM304				N/C			
Asbestos Quantification - Total - %	<0.001 %	TM304				<0.001 #			

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D11	40A-D11	40A-D11-V	40A-F12	40A-F12	40A-F12
			Depth (m)	0.50 - 0.50	2.60 - 2.60	0.00 - 0.00	0.50 - 0.50	1.00 - 1.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844959	17844964	17844968	17844931	17844954	17844936
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		106	104	100	110	102	98.3
Acenaphthene-d10 % recovery**	%	TM218		111	106	93.3	106	100	100
Phenanthrene-d10 % recovery**	%	TM218		113	114	95.9	100	105	94.9
Chrysene-d12 % recovery**	%	TM218		87	87.3	96.2	93.4	87.3	69.8
Perylene-d12 % recovery**	%	TM218		84.4	85.4	101	91.2	78.3	58.6
Naphthalene	<0.009 mg/kg	TM218		0.467 M	0.103 M	<0.009 M	0.124 M	0.0751 M	0.25 M
Acenaphthylene	<0.012 mg/kg	TM218		0.279 M	<0.06 M	<0.012 M	<0.06 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0416 M	<0.04 M	0.0316 M	0.0968 M	0.0367 M	0.796 M
Fluorene	<0.01 mg/kg	TM218		0.19 M	<0.05 M	<0.01 M	0.0539 M	0.0335 M	0.527 M
Phenanthrene	<0.015 mg/kg	TM218		1.61 M	0.344 M	0.037 M	0.307 M	0.144 M	1.08 M
Anthracene	<0.016 mg/kg	TM218		0.663 M	0.143 M	<0.016 M	<0.08 M	0.0289 M	0.218 M
Fluoranthene	<0.017 mg/kg	TM218		3.03 M	0.677 M	0.0622 M	0.473 M	0.114 M	0.43 M
Pyrene	<0.015 mg/kg	TM218		2.41 M	0.541 M	0.0504 M	0.389 M	0.112 M	0.367 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.56 M	0.32 M	0.0307 M	0.288 M	0.0395 M	0.0658 M
Chrysene	<0.01 mg/kg	TM218		1.5 M	0.343 M	0.0363 M	0.336 M	0.0645 M	0.0974 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.05 M	0.421 M	0.0519 M	0.433 M	0.0616 M	0.0884 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.774 M	0.221 M	<0.014 M	0.165 M	0.0221 M	0.0258 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.2 M	0.247 M	0.0324 M	0.298 M	0.0302 M	0.0417 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.852 M	0.171 M	0.0411 M	0.214 M	0.0278 M	0.0289 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.24 M	<0.115 M	<0.023 M	<0.115 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.884 M	0.189 M	<0.024 M	0.256 M	0.032 M	0.0414 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		17.8	3.72	0.374	3.43	0.822	4.05

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-F12-V	40A-G12	40A-G15	40A-G15	40A-G16	40A-G16
			Depth (m)	1.70 - 1.70	1.00 - 1.00	0.70 - 0.70	1.70 - 1.70	0.50 - 0.50	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844950	17844925	17844908	17844916	17844894	17844890
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		102	103	87.3	96.9	101	103
Acenaphthene-d10 % recovery**	%	TM218		95.2	106	84.3	82.3	104	96.1
Phenanthrene-d10 % recovery**	%	TM218		99.3	102	83.7	93.7	106	98.2
Chrysene-d12 % recovery**	%	TM218		102	78.1	74.8	83.6	78.6	88.5
Perylene-d12 % recovery**	%	TM218		106	73.1	66	86.5	73	81.4
Naphthalene	<0.009 mg/kg	TM218		0.017 M	0.131 M	0.0341 M	0.0144 M	0.117 M	0.0366 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0168 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0211 M	<0.008 M	0.0257 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0595 M	<0.01 M	0.0125 M	0.0181 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.0712 M	0.424 M	0.0998 M	0.0675 M	0.364 M	0.0524 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.0828 M	<0.016 M	<0.016 M	0.0308 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.112 M	0.368 M	0.0402 M	0.065 M	0.144 M	0.0272 M
Pyrene	<0.015 mg/kg	TM218		0.0862 M	0.307 M	0.0375 M	0.054 M	0.0945 M	0.0208 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0455 M	0.134 M	0.0186 M	0.0174 M	0.0416 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0757 M	0.192 M	0.0466 M	0.0343 M	0.0887 M	0.0242 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.105 M	0.229 M	0.0368 M	0.0214 M	0.0532 M	0.0222 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.028 M	0.0799 M	<0.014 M	<0.014 M	0.0182 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0481 M	0.0972 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0645 M	0.0733 M	<0.018 M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.0251 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.051 M	0.0981 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.704	2.34	0.314	0.312	0.97	0.183

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G17	40A-G17	40A-G15-V	40A-G16-V	40A-G17-V	40A-H14
			Depth (m)	0.50 - 0.50	3.30 - 3.30	3.20 - 3.20	0.90 - 0.90	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844876	17844870	17844920	17844898	17844885	17844995
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		105	103	102	95.7	91.3	88.3
Acenaphthene-d10 % recovery**	%	TM218		89	97.7	97	89.8	93	83.5
Phenanthrene-d10 % recovery**	%	TM218		101	93.9	93.8	91.9	92.8	84.5
Chrysene-d12 % recovery**	%	TM218		83.8	83.9	92.8	90	88.4	68.6
Perylene-d12 % recovery**	%	TM218		87.7	88.5	92.6	93.3	89.6	62.5
Naphthalene	<0.009 mg/kg	TM218		0.0147 #	<0.009 #	0.308 M	<0.009 M	<0.009 M	0.0945 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 #	<0.012 #	<0.012 M	<0.012 M	<0.012 M	0.0147 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 #	<0.008 #	0.596 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 #	<0.01 #	0.376 M	<0.01 M	<0.01 M	0.0193 M
Phenanthrene	<0.015 mg/kg	TM218		0.0373 #	0.0212 #	0.237 M	0.0282 M	<0.015 M	0.241 M
Anthracene	<0.016 mg/kg	TM218		<0.016 #	<0.016 #	0.0315 M	<0.016 M	<0.016 M	0.057 M
Fluoranthene	<0.017 mg/kg	TM218		0.0246 #	0.0246 #	0.108 M	0.0391 M	<0.017 M	0.441 M
Pyrene	<0.015 mg/kg	TM218		0.0197 #	0.0213 #	0.0788 M	0.0305 M	<0.015 M	0.381 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 #	<0.014 #	0.0282 M	<0.014 M	<0.014 M	0.158 M
Chrysene	<0.01 mg/kg	TM218		0.0198 #	0.0154 #	0.0443 M	0.0219 M	<0.01 M	0.218 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0171 #	<0.015 #	0.0438 M	0.0345 M	<0.015 M	0.262 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 #	<0.014 #	<0.014 M	<0.014 M	<0.014 M	0.0785 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 #	<0.015 #	0.029 M	<0.015 M	<0.015 M	0.135 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 #	<0.018 #	<0.018 M	<0.018 M	<0.018 M	0.119 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 #	<0.023 #	<0.023 M	<0.023 M	<0.023 M	0.029 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 #	<0.024 #	<0.024 M	<0.024 M	<0.024 M	0.114 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.133	<0.118	1.88	0.154	<0.118	2.36

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H14	40A-H14-V	40A-I15	40A-I15	40A-I16	40A-I17
			Depth (m)	1.00 - 1.00	1.30 - 1.30	1.50 - 1.50	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17845004	17844817	17844840	17844846	17844826	17844856
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.8	91.8	98.6	90.7	90.6	95
Acenaphthene-d10 % recovery**	%	TM218		92.1	90.7	94	85.6	76	96
Phenanthrene-d10 % recovery**	%	TM218		92.8	90.8	90.5	90.5	87.7	99.8
Chrysene-d12 % recovery**	%	TM218		89.3	86.3	84.5	77.6	85.4	89.9
Perylene-d12 % recovery**	%	TM218		94	89.1	80.5	75.5	80.1	90.5
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	0.0429 M	0.0403 M	0.0373 M	0.0295 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	0.0163 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	0.0399 M	0.013 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.0282 M	0.0176 M	0.0117 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	0.346 M	0.114 M	0.0811 M	0.0498 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.0848 M	0.0289 M	0.0268 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	<0.017 M	1.03 M	0.253 M	0.296 M	0.0508 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	1.07 M	0.257 M	0.284 M	0.0425 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	0.795 M	0.18 M	0.223 M	0.0265 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.741 M	0.22 M	0.233 M	0.0273 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	1.3 M	0.34 M	0.401 M	0.0367 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	0.517 M	0.117 M	0.152 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	1.12 M	0.216 M	0.281 M	0.0238 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	0.688 M	0.175 M	0.244 M	0.0216 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	0.193 M	0.045 M	0.0558 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	0.835 M	0.175 M	0.225 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	<0.118	8.86	2.19	2.55	0.309

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-I18	40A-I15-V	40A-I16-V	40A-J14	40A-J14	40A-JK16
			Depth (m)	2.00 - 2.00	0.40 - 0.40	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844863	17844851	17844833	17844810	17844881	17844986
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		98	95.7	89.3	98.6	99.1	110
Acenaphthene-d10 % recovery**	%	TM218		101	98.5	91.5	94.6	93.1	115
Phenanthrene-d10 % recovery**	%	TM218		106	96.1	83.1	92.2	89.3	105
Chrysene-d12 % recovery**	%	TM218		83.6	91.8	87.9	90.5	90.3	99.8
Perylene-d12 % recovery**	%	TM218		81.2	93.5	89.7	88.5	83.5	112
Naphthalene	<0.009 mg/kg	TM218		0.0227 M	<0.009 M	<0.009 M	0.0223 M	0.0421 M	0.828 #
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	1.04 #
Acenaphthene	<0.008 mg/kg	TM218		0.0146 M	<0.008 M	<0.008 M	0.0106 M	0.0948 M	6.19 #
Fluorene	<0.01 mg/kg	TM218		0.0159 M	<0.01 M	<0.01 M	<0.01 M	0.0176 M	6.54 #
Phenanthrene	<0.015 mg/kg	TM218		0.0894 M	<0.015 M	<0.015 M	0.086 M	0.159 M	5.3 #
Anthracene	<0.016 mg/kg	TM218		0.0197 M	<0.016 M	<0.016 M	0.0204 M	0.0206 M	3.99 #
Fluoranthene	<0.017 mg/kg	TM218		0.0918 M	<0.017 M	<0.017 M	0.152 M	0.104 M	6.09 #
Pyrene	<0.015 mg/kg	TM218		0.0775 M	<0.015 M	<0.015 M	0.152 M	0.108 M	18.3 #
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0516 M	<0.014 M	<0.014 M	0.0757 M	0.0513 M	7.5 #
Chrysene	<0.01 mg/kg	TM218		0.0657 M	<0.01 M	<0.01 M	0.0918 M	0.0836 M	12.6 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.104 M	<0.015 M	<0.015 M	0.127 M	0.0815 M	2.8 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0344 M	<0.014 M	<0.014 M	0.0433 M	0.0263 M	0.862 #
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0606 M	<0.015 M	<0.015 M	0.0856 M	0.0501 M	5.08 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.044 M	<0.018 M	<0.018 M	0.0653 M	0.0349 M	1.06 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	1.07 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.061 M	<0.024 M	<0.024 M	0.073 M	0.0484 M	2.34 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.753	<0.118	<0.118	1.01	0.922	81.6

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-JK16-V	40A-J14-V	40A-L15	40A-L15-V		
			Depth (m)	1.50 - 1.50	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018		
			SDG Ref	180629-96	180629-96	180629-96	180629-96		
			Lab Sample No.(s)	17844990	17844943	17844973	17844981		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.7	99.2	97.7	82.1		
Acenaphthene-d10 % recovery**	%	TM218		86.3	99.7	90.7	80.5		
Phenanthrene-d10 % recovery**	%	TM218		85.9	102	90.3	80.1		
Chrysene-d12 % recovery**	%	TM218		82.1	92.3	88.1	79.8		
Perylene-d12 % recovery**	%	TM218		84	92.4	86.9	82		
Naphthalene	<0.009 mg/kg	TM218		0.0315 M	<0.009 M	0.0172 M	<0.009 M		
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M		
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	<0.008 M		
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	0.0626 M	<0.015 M		
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	<0.016 M	<0.016 M		
Fluoranthene	<0.017 mg/kg	TM218		0.0284 M	<0.017 M	0.0845 M	<0.017 M		
Pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	0.0801 M	<0.015 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	0.0467 M	<0.014 M		
Chrysene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.0515 M	<0.01 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0258 M	<0.015 M	0.0652 M	<0.015 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	0.0264 M	<0.014 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	0.0485 M	<0.015 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	0.0387 M	<0.018 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	0.0498 M	<0.024 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	<0.118	0.571	<0.118		

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D11	40A-D11	40A-D11-V	40A-F12	40A-F12	40A-F12
			Depth (m)	0.50 - 0.50	2.60 - 2.60	0.00 - 0.00	0.50 - 0.50	1.00 - 1.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844959	17844964	17844968	17844931	17844954	17844936
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		62	96	84	69	87	85
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.0441
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.43	0.351	0.441	4.1	12.2	15.3
Aliphatics >C16-C21	<0.1 mg/kg	TM173		16.1	4.24	<0.1	29.6	37.9	52.5
Aliphatics >C21-C35	<0.1 mg/kg	TM173		54.1	12.2	1.9	287	78.9	141
Aliphatics >C35-C44	<0.1 mg/kg	TM173		12.8	3.62	5.9	318	23	50.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		84.5	20.4	8.23	638	152	259
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		5.06	0.712	0.637	3.99	2.87	5.2
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		44.1	5.3	3.67	22.1	12.7	19.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		103	22.1	68.7	598	36.7	57.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		27.3	11.7	9.39	754	21.1	57.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		8.94	5.33	1.32	324	8.6	28.4
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		179	39.8	82.4	1380	73.4	140
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		264	60.2	90.6	2020	226	399

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-F12-V	40A-G12	40A-G15	40A-G15	40A-G16	40A-G16
			Depth (m)	1.70 - 1.70	1.00 - 1.00	0.70 - 0.70	1.70 - 1.70	0.50 - 0.50	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844950	17844925	17844908	17844916	17844894	17844890
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		70	77	67	88	63	100
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0504	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.29	5.2	9.72	0.875	2.48	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		1.01	29.8	68.4	3.53	4.18	0.843
Aliphatics >C21-C35	<0.1 mg/kg	TM173		16.7	217	92.6	18.1	11.8	7.45
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	33.3	3.05	3.37	2.09	1.44
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		18	286	174	25.9	20.5	9.74
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	3.79	0.717	0.561	1.87	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1.22	17.5	6.88	4.72	5.29	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		117	81.4	19.2	15.4	10.1	<0.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		12.5	27.8	0.777	0.867	1.13	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.58	11	<0.1	<0.1	<0.1	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		131	131	27.5	21.5	18.4	<0.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		149	416	201	47.4	38.9	9.74

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G17	40A-G17	40A-G15-V	40A-G16-V	40A-G17-V	40A-H14
			Depth (m)	0.50 - 0.50	3.30 - 3.30	3.20 - 3.20	0.90 - 0.90	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844876	17844870	17844920	17844898	17844885	17844995
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		100	95	57	86	93	89
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	1.04	<0.1	<0.1	5.3
Aliphatics >C16-C21	<0.1 mg/kg	TM173		3.86	9.7	1.54	<0.1	<0.1	23.3
Aliphatics >C21-C35	<0.1 mg/kg	TM173		3.54	5.58	12.7	4.84	0.902	81.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		0.584	<0.1	0.385	<0.1	<0.1	21.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		7.99	15.3	15.7	4.84	0.902	132
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.487	0.645	3.78	0.175	0.295	1.17
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1.74	2.12	2.74	0.724	<0.1	11.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		4.86	6.09	84.9	40.5	9.09	40.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		5.99	5.47	8.52	5.36	3.58	14.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.23	2.91	2.48	1.34	1.67	4.78
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		13.1	14.3	100	46.7	13	66.6
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		21.1	29.6	116	51.6	13.9	198

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H14	40A-H14-V	40A-I15	40A-I15	40A-I16	40A-I17
			Depth (m)	1.00 - 1.00	1.30 - 1.30	1.50 - 1.50	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17845004	17844817	17844840	17844846	17844826	17844856
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		99	91	81	82	84	90
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0723	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	0.228	3.5	9.75	0.67	0.851
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	0.131	11.7	30.8	4.02	2.16
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1.96	0.915	46	40.8	24.9	11.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	12.2	7.98	4.97	2.46
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		1.96	1.27	73.4	89.3	34.6	17
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	0.0482	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	0.791	1.15	1.13	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1.67	<0.1	6.83	11.9	6.34	1.02
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		<0.1	1.91	44.8	32.8	40.1	7.6
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	18	8.21	18.3	0.737
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	6.35	2.56	8.11	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		1.67	1.91	70.3	54.1	65.9	9.36
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		3.63	3.18	144	144	100	26.3

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-I18	40A-I15-V	40A-I16-V	40A-J14	40A-J14	40A-JK16
			Depth (m)	2.00 - 2.00	0.40 - 0.40	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844863	17844851	17844833	17844810	17844881	17844986
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		91	84	103	84	75	53
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.176	0.226	47.8
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	0.248
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	3.9
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	10.1
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0655	16.1
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.94	0.676	0.308	2.38	4.93	816
Aliphatics >C16-C21	<0.1 mg/kg	TM173		8.51	<0.1	<0.1	8.57	9.92	1100
Aliphatics >C21-C35	<0.1 mg/kg	TM173		28.1	2.28	1.18	89.7	222	3580
Aliphatics >C35-C44	<0.1 mg/kg	TM173		6.28	<0.1	<0.1	16.4	20.1	1380
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		45.9	2.95	1.49	117	257	6880
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	6.7
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	0.0429	10.7
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.841	0.18	<0.1	0.732	7.02	507
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		6.16	<0.1	<0.1	4.2	17.9	1360
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		46.2	10.3	2.98	31.9	74.4	4070
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		31	<0.1	<0.1	16.9	17.1	1250
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		13.5	<0.1	<0.1	7.56	6.78	532
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		84.2	10.5	2.98	53.7	116	7180
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		130	13.4	4.47	171	373	14100

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

TPH CWG (S)

Results Legend		Customer Sample Ref.	40A-JK16-V	40A-J14-V	40A-L15	40A-L15-V		
#	ISO17025 accredited.							
M	*m*CERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.	Depth (m)	1.50 - 1.50	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00		
tot.unfilt	Total / unfiltered sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
*	Subcontracted test.	Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Time	00:00	00:00	00:00	00:00		
		Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018		
		SDG Ref	180629-96	180629-96	180629-96	180629-96		
(F)	Trigger breach confirmed	Lab Sample No.(s)	17844990	17844943	17844973	17844981		
1-5&+§@	Sample deviation (see appendix)	AGS Reference						

Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	103	71	82	102		
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089	<0.176	<0.176	<0.176	<0.176		
Aliphatics >C5-C6	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	<0.04		
Aliphatics >C6-C8	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	<0.04		
Aliphatics >C8-C10	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	<0.04		
Aliphatics >C10-C12	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	<0.04		
Aliphatics >C12-C16	<0.1 mg/kg	TM173	<0.1	<0.1	5.51	<0.1		
Aliphatics >C16-C21	<0.1 mg/kg	TM173	<0.1	<0.1	11.8	<0.1		
Aliphatics >C21-C35	<0.1 mg/kg	TM173	7.38	71.5	27.3	2		
Aliphatics >C35-C44	<0.1 mg/kg	TM173	<0.1	0.835	6.48	<0.1		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173	7.38	72.3	51	2		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	<0.04		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	<0.04		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	<0.04		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089	<0.04	<0.04	<0.04	<0.04		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173	<0.1	1.16	2.49	<0.1		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173	<0.1	7.51	6.18	<0.1		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173	35.3	330	21.8	7.37		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173	6	45	9.33	1.3		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173	1.62	14.1	3.7	<0.1		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173	41.3	383	39.8	8.67		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173	48.7	456	90.9	10.7		

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-D11	40A-D11	40A-D11-V	40A-F12	40A-F12	40A-F12
			Depth (m)	0.50 - 0.50	2.60 - 2.60	0.00 - 0.00	0.50 - 0.50	1.00 - 1.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844959	17844964	17844968	17844931	17844954	17844936
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	100	107	103	113	112
Toluene-d8**	%	TM116		95.7	98.9	94.2	94.1	98.5	98.3
4-Bromofluorobenzene**	%	TM116		74.9	104	97.5	93.7	87.6	83.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-F12-V	40A-G12	40A-G15	40A-G15	40A-G16	40A-G16
			Depth (m)	1.70 - 1.70	1.00 - 1.00	0.70 - 0.70	1.70 - 1.70	0.50 - 0.50	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844950	17844925	17844908	17844916	17844894	17844890
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	117	101	115	105	112
Toluene-d8**	%	TM116		96	97.1	96.7	98.6	97.8	100
4-Bromofluorobenzene**	%	TM116		102	84.7	92.2	82	93.4	100
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G17	40A-G17	40A-G15-V	40A-G16-V	40A-G17-V	40A-H14
			Depth (m)	0.50 - 0.50	3.30 - 3.30	3.20 - 3.20	0.90 - 0.90	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844876	17844870	17844920	17844898	17844885	17844995
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	118	118	116	116	114
Toluene-d8**	%	TM116		99.2	98	96	96.3	98.7	97
4-Bromofluorobenzene**	%	TM116		99.2	84.6	83.7	94	87.3	82.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 #	<0.09 #	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 #	<0.07 #	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 #	<0.04 #	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 #	<0.13 #	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H14	40A-H14-V	40A-I15	40A-I15	40A-I16	40A-I17
			Depth (m)	1.00 - 1.00	1.30 - 1.30	1.50 - 1.50	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17845004	17844817	17844840	17844846	17844826	17844856
			AGS Reference						
Dibromofluoromethane**	%	TM116		115	119	116	117	110	118
Toluene-d8**	%	TM116		98.5	95.7	96.9	97.6	99.7	96.9
4-Bromofluorobenzene**	%	TM116		90.2	85	79.1	83.3	82	84.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-I18	40A-I15-V	40A-I16-V	40A-J14	40A-J14	40A-JK16
			Depth (m)	2.00 - 2.00	0.40 - 0.40	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
			SDG Ref	180629-96	180629-96	180629-96	180629-96	180629-96	180629-96
			Lab Sample No.(s)	17844863	17844851	17844833	17844810	17844881	17844986
			AGS Reference						
Dibromofluoromethane**	%	TM116		116	114	107	104	102	110
Toluene-d8**	%	TM116		92.7	99.7	96	98.2	94.5	90.5
4-Bromofluorobenzene**	%	TM116		79.1	88.1	98	100	88	77.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.2 #
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.18 #
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.14 #
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	0.185 #
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.2 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.2 #
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	1.1 #
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.8

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-JK16-V	40A-J14-V	40A-L15	40A-L15-V		
			Depth (m)	1.50 - 1.50	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	28/06/2018	28/06/2018	28/06/2018	28/06/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	29/06/2018	29/06/2018	29/06/2018	29/06/2018		
			SDG Ref	180629-96	180629-96	180629-96	180629-96		
			Lab Sample No.(s)	17844990	17844943	17844973	17844981		
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	110	113	102		
Toluene-d8**	%	TM116		98.9	88.6	99.9	98.8		
4-Bromofluorobenzene**	%	TM116		104	81.2	81.6	105		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M		
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M		
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M		
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #		
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M		
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4		

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-D11 0.50 - 0.50 SOLID 28/06/2018 00:00:00 29/06/2018 21:05:51 180629-96 17844959 TM048	04/07/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-F12 1.00 - 1.00 SOLID 28/06/2018 00:00:00 30/06/2018 07:41:08 180629-96 17844954 TM048	04/07/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-F12 2.30 - 2.30 SOLID 28/06/2018 00:00:00 30/06/2018 07:38:28 180629-96 17844936 TM048	03/07/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-G12 1.00 - 1.00 SOLID 28/06/2018 00:00:00 29/06/2018 21:02:53 180629-96 17844925 TM048	04/07/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-G15 1.70 - 1.70 SOLID 28/06/2018 00:00:00 29/06/2018 17:41:08 180629-96 17844916 TM048	03/07/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-G16 0.50 - 0.50 SOLID 28/06/2018 00:00:00 30/06/2018 07:07:52 180629-96 17844894 TM048	04/07/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-G17 3.30 - 3.30 SOLID 28/06/2018 00:00:00 29/06/2018 17:40:08 180629-96 17844870 TM048	04/07/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-H14 0.50 - 0.50 SOLID 28/06/2018 00:00:00 29/06/2018 17:52:07 180629-96 17844995 TM048	04/07/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-I15 1.50 - 1.50 SOLID 28/06/2018 00:00:00 29/06/2018 17:57:28 180629-96 17844840 TM048	04/07/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-I15 2.70 - 2.70 SOLID 28/06/2018 00:00:00 29/06/2018 18:44:53 180629-96 17844846 TM048	04/07/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-I16 0.50 - 0.50 SOLID 28/06/2018 00:00:00 29/06/2018 18:42:57 180629-96 17844826 TM048	04/07/2018	Marcin Magdziarek	Bundle of fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-I17 1.00 - 1.00 SOLID 28/06/2018 00:00:00 29/06/2018 17:55:24 180629-96 17844856 TM048	04/07/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-I18 2.00 - 2.00 SOLID 28/06/2018 00:00:00 29/06/2018 17:37:37 180629-96 17844863 TM048	04/07/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-J14 0.50 - 0.50 SOLID 28/06/2018 00:00:00 29/06/2018 18:00:33 180629-96 17844810 TM048	04/07/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-JK16 0.50 - 0.50 SOLID 28/06/2018 00:00:00 29/06/2018 18:04:14 180629-96 17844986 TM048	05/07/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-L15 0.50 - 0.50 SOLID 28/06/2018 00:00:00 29/06/2018 17:58:21 180629-96 17844973 TM048	04/07/2018	Renata Bozhkov	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-I16 0.50 - 0.50 SOLID 28/06/2018 00:00:00 29/06/2018 18:43:40 180629-96 17844826 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	0.0012 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-L15 0.50 - 0.50 SOLID 28/06/2018 00:00:00 29/06/2018 17:59:11 180629-96 17844973 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844810
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-J14
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.282	<0.2	2.82	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000732	<0.0005	0.00732	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00223	<0.001	0.0223	<0.01	-	-	-
Copper	0.00931	<0.0003	0.0931	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00111	<0.0004	0.0111	<0.004	-	-	-
Selenium	0.00222	<0.001	0.0222	<0.01	-	-	-
Vanadium	0.0119	<0.001	0.119	<0.01	-	-	-
Zinc	0.00212	<0.001	0.0212	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.203	<0.019	2.03	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000291	<0.00001	0.000291	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000209	<0.000005	0.000209	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Anthracene by GCMS	0.00000563	<0.000005	0.0000563	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000199	<0.000005	0.000199	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000201	<0.000005	0.000201	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000113	<0.000082	0.00113	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	809.00
Temperature (°C)	23.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
12/07/2018 17:16:35

17:15:57 12/07/2018

CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844810
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-J14
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	809.00
Temperature (°C)	23.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844826
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-I16
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00822	<0.0005	0.0822	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00214	<0.0003	0.0214	<0.003	-	-	-
Lead	0.000654	<0.0002	0.00654	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000744	<0.0004	0.00744	<0.004	-	-	-
Selenium	0.00531	<0.001	0.0531	<0.01	-	-	-
Vanadium	0.0336	<0.001	0.336	<0.01	-	-	-
Zinc	0.00151	<0.001	0.0151	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.646	<0.019	6.46	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000247	<0.000005	0.000247	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000094	<0.000005	0.000094	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000291	<0.000005	0.000291	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000122	<0.000002	0.000122	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000953	<0.000082	0.000953	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	8.93
Conductivity (µS/cm)	135.00
Temperature (°C)	24.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844826
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-I16
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	8.93
Conductivity (µS/cm)	135.00
Temperature (°C)	24.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844840
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-I15
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.057	<0.05	0.57	<0.5	-	-	-
Arsenic	0.006	<0.0005	0.06	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00199	<0.001	0.0199	<0.01	-	-	-
Copper	0.00667	<0.0003	0.0667	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00138	<0.0004	0.0138	<0.004	-	-	-
Selenium	0.00238	<0.001	0.0238	<0.01	-	-	-
Vanadium	0.0429	<0.001	0.429	<0.01	-	-	-
Zinc	0.00168	<0.001	0.0168	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.333	<0.019	3.33	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000232	<0.00001	0.000232	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000481	<0.000005	0.000481	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000472	<0.000005	0.000472	<0.00005	-	-	-
Anthracene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Phenanthrene by GCMS	0.000069	<0.000005	0.00069	<0.00005	-	-	-
Fluorene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000508	<0.000005	0.000508	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00026	<0.000082	0.0026	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	375.00
Temperature (°C)	24.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844840
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-I15
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.029	<0.01	0.29	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	375.00
Temperature (°C)	24.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844846
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-I15
Depth (m)	2.70 - 2.70

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0073	<0.0005	0.073	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00702	<0.0003	0.0702	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00158	<0.0004	0.0158	<0.004	-	-	-
Selenium	0.00802	<0.001	0.0802	<0.01	-	-	-
Vanadium	0.103	<0.001	1.03	<0.01	-	-	-
Zinc	0.00151	<0.001	0.0151	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000169	<0.00001	0.000169	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000185	<0.000005	0.000185	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	10.70
Conductivity (µS/cm)	283.00
Temperature (°C)	25.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844846
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-I15
Depth (m)	2.70 - 2.70

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	10.70
Conductivity (µS/cm)	283.00
Temperature (°C)	25.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844856
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-I17
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.266	<0.2	2.66	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00541	<0.0005	0.0541	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00372	<0.001	0.0372	<0.01	-	-	-
Copper	0.0138	<0.0003	0.138	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00189	<0.0004	0.0189	<0.004	-	-	-
Selenium	0.00273	<0.001	0.0273	<0.01	-	-	-
Vanadium	0.047	<0.001	0.47	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000132	<0.00001	0.000132	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000014	<0.000005	0.00014	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000154	<0.000005	0.000154	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	9.98
Conductivity (µS/cm)	474.00
Temperature (°C)	24.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844856
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-I17
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	9.98
Conductivity (µS/cm)	474.00
Temperature (°C)	24.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 Client Reference: Report Number: 464053
Location: Llanwern Order Number: LLA454 Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844863
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-I18
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00226	<0.0005	0.0226	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0026	<0.0003	0.026	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000746	<0.0004	0.00746	<0.004	-	-	-
Selenium	0.014	<0.001	0.14	<0.01	-	-	-
Vanadium	0.0107	<0.001	0.107	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.277	<0.019	2.77	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000108	<0.00001	0.000108	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000806	<0.000005	0.0000806	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	8.86
Conductivity (µS/cm)	170.00
Temperature (°C)	24.00
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844863
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-I18
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	8.86
Conductivity (µS/cm)	170.00
Temperature (°C)	24.00
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates
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17:15:57 12/07/2018

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844870
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-G17
Depth (m)	3.30 - 3.30

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00554	<0.0005	0.0554	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000456	<0.0003	0.00456	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00131	<0.001	0.0131	<0.01	-	-	-
Vanadium	0.0136	<0.001	0.136	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.201	<0.019	2.01	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	7.92
Conductivity (µS/cm)	72.70
Temperature (°C)	23.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844870
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-G17
Depth (m)	3.30 - 3.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	7.92
Conductivity (µS/cm)	72.70
Temperature (°C)	23.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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17:15:57 12/07/2018

CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844876
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-G17
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00433	<0.0005	0.0433	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0011	<0.0003	0.011	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000739	<0.0004	0.00739	<0.004	-	-	-
Selenium	0.00174	<0.001	0.0174	<0.01	-	-	-
Vanadium	0.00684	<0.001	0.0684	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	8.73
Conductivity (µS/cm)	83.20
Temperature (°C)	24.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844876
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-G17
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	8.73
Conductivity (µS/cm)	83.20
Temperature (°C)	24.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844881
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-J14
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	2.67	<0.2	26.7	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.853	<0.05	8.53	<0.5	-	-	-
Arsenic	0.00417	<0.0005	0.0417	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00345	<0.001	0.0345	<0.01	-	-	-
Copper	0.00531	<0.0003	0.0531	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00239	<0.0004	0.0239	<0.004	-	-	-
Selenium	0.00959	<0.001	0.0959	<0.01	-	-	-
Vanadium	0.0807	<0.001	0.807	<0.01	-	-	-
Zinc	0.00217	<0.001	0.0217	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.416	<0.019	4.16	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000018	<0.00001	0.00018	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000402	<0.000005	0.000402	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000595	<0.000005	0.0000595	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000106	<0.000005	0.000106	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000637	<0.000005	0.0000637	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	10.83
Conductivity (µS/cm)	448.00
Temperature (°C)	24.23
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844881
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-J14
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	10.83
Conductivity (µS/cm)	448.00
Temperature (°C)	24.23
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844890
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-G16
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.26	<0.2	12.6	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00252	<0.0005	0.0252	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0328	<0.003	0.328	<0.03	-	-	-
Nickel	0.000753	<0.0004	0.00753	<0.004	-	-	-
Selenium	0.00163	<0.001	0.0163	<0.01	-	-	-
Vanadium	0.00329	<0.001	0.0329	<0.01	-	-	-
Zinc	0.00202	<0.001	0.0202	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Jul-2018
pH (pH Units)	8.30
Conductivity (µS/cm)	148.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
12/07/2018 17:16:35

17:15:57 12/07/2018

CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844890
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-G16
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Jul-2018
pH (pH Units)	8.30
Conductivity (µS/cm)	148.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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17:15:57 12/07/2018

CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.2
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844894
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-G16
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.234	<0.2	2.34	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00209	<0.0005	0.0209	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000781	<0.0003	0.00781	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0702	<0.003	0.702	<0.03	-	-	-
Nickel	0.000697	<0.0004	0.00697	<0.004	-	-	-
Selenium	0.0024	<0.001	0.024	<0.01	-	-	-
Vanadium	0.00255	<0.001	0.0255	<0.01	-	-	-
Zinc	0.00296	<0.001	0.0296	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Jul-2018
pH (pH Units)	8.22
Conductivity (µS/cm)	185.00
Temperature (°C)	22.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.2
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844894
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-G16
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Jul-2018
pH (pH Units)	8.22
Conductivity (µS/cm)	185.00
Temperature (°C)	22.70
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844908
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-G15
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00383	<0.0005	0.0383	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0101	<0.003	0.101	<0.03	-	-	-
Nickel	0.000419	<0.0004	0.00419	<0.004	-	-	-
Selenium	0.00311	<0.001	0.0311	<0.01	-	-	-
Vanadium	0.0104	<0.001	0.104	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.894	<0.019	8.94	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000105	<0.00001	0.000105	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Jul-2018
pH (pH Units)	9.17
Conductivity (µS/cm)	112.00
Temperature (°C)	23.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844908
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-G15
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Jul-2018
pH (pH Units)	9.17
Conductivity (µS/cm)	112.00
Temperature (°C)	23.50
Volume Leachant (Litres)	0.891

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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844916
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-G15
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.664	<0.2	6.64	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00102	<0.0005	0.0102	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.174	<0.003	1.74	<0.03	-	-	-
Nickel	0.000872	<0.0004	0.00872	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000233	<0.00001	0.000233	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000241	<0.000005	0.000241	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000859	<0.000005	0.0000859	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Jul-2018
pH (pH Units)	8.64
Conductivity (µS/cm)	259.00
Temperature (°C)	23.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844916
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-G15
Depth (m)	1.70 - 1.70

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Jul-2018
pH (pH Units)	8.64
Conductivity (µS/cm)	259.00
Temperature (°C)	23.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	6.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.6
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844925
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-G12
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000339	<0.00001	0.000339	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000884	<0.0005	0.00884	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00313	<0.001	0.0313	<0.01	-	-	-
Copper	0.00437	<0.0003	0.0437	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0053	<0.003	0.053	<0.03	-	-	-
Nickel	0.00106	<0.0004	0.0106	<0.004	-	-	-
Selenium	0.0024	<0.001	0.024	<0.01	-	-	-
Vanadium	0.0252	<0.001	0.252	<0.01	-	-	-
Zinc	0.00332	<0.001	0.0332	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.228	<0.019	2.28	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000613	<0.00001	0.000613	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000393	<0.000005	0.000393	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000537	<0.000005	0.000537	<0.00005	-	-	-
Anthracene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Phenanthrene by GCMS	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Fluorene by GCMS	0.0000255	<0.000005	0.000255	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000481	<0.000005	0.000481	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000372	<0.000082	0.00372	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.056	<0.05	0.56	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	11.25
Conductivity (µS/cm)	797.00
Temperature (°C)	23.60
Volume Leachant (Litres)	0.894

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CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	6.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.6
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844925
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-G12
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.021	<0.01	0.21	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.014	<0.01	0.14	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.056	<0.01	0.56	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	11.25
Conductivity (µS/cm)	797.00
Temperature (°C)	23.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.28
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.9
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844931
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-F12
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000326	<0.00001	0.000326	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00227	<0.0005	0.0227	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00211	<0.001	0.0211	<0.01	-	-	-
Copper	0.00776	<0.0003	0.0776	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000634	<0.0004	0.00634	<0.004	-	-	-
Selenium	0.0028	<0.001	0.028	<0.01	-	-	-
Vanadium	0.0842	<0.001	0.842	<0.01	-	-	-
Zinc	0.00339	<0.001	0.0339	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000481	<0.00001	0.00481	<0.0001	-	-	-
Acenaphthene by GCMS	0.000429	<0.000005	0.00429	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000384	<0.000005	0.000384	<0.00005	-	-	-
Anthracene by GCMS	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Phenanthrene by GCMS	0.000137	<0.000005	0.00137	<0.00005	-	-	-
Fluorene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000257	<0.000005	0.000257	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00124	<0.000082	0.0124	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Jul-2018
pH (pH Units)	10.68
Conductivity (µS/cm)	362.00
Temperature (°C)	23.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.28
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.9
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844931
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-F12
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Jul-2018
pH (pH Units)	10.68
Conductivity (µS/cm)	362.00
Temperature (°C)	23.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.3
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844936
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-F12
Depth (m)	2.30 - 2.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.513	<0.2	5.13	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00274	<0.0005	0.0274	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0133	<0.001	0.133	<0.01	-	-	-
Vanadium	0.0533	<0.001	0.533	<0.01	-	-	-
Zinc	0.00185	<0.001	0.0185	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00146	<0.00001	0.0146	<0.0001	-	-	-
Acenaphthene by GCMS	0.00183	<0.000005	0.0183	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000095	<0.000005	0.000095	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Anthracene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Phenanthrene by GCMS	0.000169	<0.000005	0.00169	<0.00005	-	-	-
Fluorene by GCMS	0.000347	<0.000005	0.00347	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000947	<0.000005	0.0000947	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00386	<0.000082	0.0386	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	427.00
Temperature (°C)	24.30
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.3
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844936
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-F12
Depth (m)	2.30 - 2.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.012	<0.01	0.12	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	427.00
Temperature (°C)	24.30
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844954
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-F12
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	3.83	<0.2	38.3	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00804	<0.0005	0.0804	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00156	<0.0003	0.0156	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000903	<0.0004	0.00903	<0.004	-	-	-
Selenium	0.0124	<0.001	0.124	<0.01	-	-	-
Vanadium	0.167	<0.001	1.67	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000127	<0.00001	0.00127	<0.0001	-	-	-
Acenaphthene by GCMS	0.000186	<0.000005	0.00186	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000633	<0.000005	0.000633	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Anthracene by GCMS	0.00000512	<0.000005	0.0000512	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000421	<0.000005	0.000421	<0.00005	-	-	-
Fluorene by GCMS	0.0000327	<0.000005	0.000327	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000111	<0.000005	0.000111	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00048	<0.000082	0.0048	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	10.07
Conductivity (µS/cm)	193.00
Temperature (°C)	24.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844954
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-F12
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	10.07
Conductivity (µS/cm)	193.00
Temperature (°C)	24.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844959
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-D11
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00637	<0.0005	0.0637	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00162	<0.0003	0.0162	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000528	<0.0004	0.00528	<0.004	-	-	-
Selenium	0.00639	<0.001	0.0639	<0.01	-	-	-
Vanadium	0.0318	<0.001	0.318	<0.01	-	-	-
Zinc	0.00127	<0.001	0.0127	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000185	<0.00001	0.000185	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000542	<0.000005	0.000542	<0.00005	-	-	-
Anthracene by GCMS	0.0000161	<0.000005	0.000161	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000345	<0.000005	0.000345	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000135	<0.000005	0.000135	<0.00005	-	-	-
Pyrene by GCMS	0.0000464	<0.000005	0.000464	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000139	<0.000002	0.000139	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000999	<0.000005	0.0000999	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000207	<0.000082	0.00207	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	9.45
Conductivity (µS/cm)	129.00
Temperature (°C)	23.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844959
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-D11
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	9.45
Conductivity (µS/cm)	129.00
Temperature (°C)	23.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844964
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-D11
Depth (m)	2.60 - 2.60

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00461	<0.0005	0.0461	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000743	<0.0003	0.00743	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0049	<0.001	0.049	<0.01	-	-	-
Vanadium	0.0206	<0.001	0.206	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000189	<0.00001	0.000189	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000218	<0.000005	0.000218	<0.00005	-	-	-
Anthracene by GCMS	0.00000723	<0.000005	0.0000723	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000754	<0.000002	0.0000754	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000103	<0.000082	0.00103	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	8.95
Conductivity (µS/cm)	130.00
Temperature (°C)	24.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844964
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-D11
Depth (m)	2.60 - 2.60

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	8.95
Conductivity (µS/cm)	130.00
Temperature (°C)	24.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844973
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-L15
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0112	<0.0005	0.112	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000826	<0.0002	0.00826	<0.002	-	-	-
Manganese	2.16	<0.003	21.6	<0.03	-	-	-
Nickel	0.00198	<0.0004	0.0198	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00131	<0.001	0.0131	<0.01	-	-	-
Zinc	0.0013	<0.001	0.013	<0.01	-	-	-
Iron (Dis.Filt) mg/l	68.1	<0.0894	681	<0.894	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	7.10
Conductivity (µS/cm)	119.00
Temperature (°C)	23.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844973
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-L15
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	7.10
Conductivity (µS/cm)	119.00
Temperature (°C)	23.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.138	**Natural Moisture Content (%)**	53.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	65
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844986
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-JK16
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.445	<0.2	4.45	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.828	<0.05	8.28	<0.5	-	-	-
Arsenic	0.0008	<0.0005	0.008	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0991	<0.003	0.991	<0.03	-	-	-
Nickel	0.000889	<0.0004	0.00889	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00248	<0.001	0.0248	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.309	<0.019	3.09	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00153	<0.00001	0.0153	<0.0001	-	-	-
Acenaphthene by GCMS	0.00299	<0.000005	0.0299	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000315	<0.000005	0.00315	<0.00005	-	-	-
Fluoranthene by GCMS	0.000178	<0.000005	0.00178	<0.00005	-	-	-
Anthracene by GCMS	0.000426	<0.000005	0.00426	<0.00005	-	-	-
Phenanthrene by GCMS	0.000702	<0.000005	0.00702	<0.00005	-	-	-
Fluorene by GCMS	0.00259	<0.000005	0.0259	<0.00005	-	-	-
Chrysene by GCMS	0.0000527	<0.000005	0.000527	<0.00005	-	-	-
Pyrene by GCMS	0.000438	<0.000005	0.00438	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000317	<0.000005	0.000317	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000523	<0.000002	0.0000523	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00927	<0.000082	0.0927	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	4.76	<0.5	47.6	<5	-	-	-
Aliphatics C5-C6	<0.1	<0.1	<1	<1	-	-	-
Aliphatics >C6-C8	0.137	<0.1	1.37	<1	-	-	-

Leach Test Information

Date Prepared	04-Jul-2018
pH (pH Units)	8.67
Conductivity (µS/cm)	219.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.852

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.138	**Natural Moisture Content (%)**	53.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	65
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844986
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-JK16
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.492	<0.1	4.92	<1	-	-	-
Aliphatics >C10-C12	2.26	<0.1	22.6	<1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.1	<0.1	<1	<1	-	-	-
Aromatics >C7-C8	<0.1	<0.1	<1	<1	-	-	-
MTBE GC-FID	<0.03	<0.03	<0.3	<0.3	-	-	-
Aromatics >EC8 -EC10	0.328	<0.1	3.28	<1	-	-	-
Aromatics >EC10-EC12	1.51	<0.1	15.1	<1	-	-	-
Aromatics >EC12-EC16	0.115	<0.01	1.15	<0.1	-	-	-
Aromatics >EC16-EC21	0.074	<0.01	0.74	<0.1	-	-	-
Aromatics >EC21-EC35	0.018	<0.01	0.18	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.207	<0.01	2.07	<0.1	-	-	-
Benzene by GC	<0.07	<0.07	<0.7	<0.7	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	4.96	<0.01	49.6	<0.1	-	-	-
Toluene by GC	<0.04	<0.04	<0.4	<0.4	-	-	-
Ethylbenzene by GC	<0.05	<0.05	<0.5	<0.5	-	-	-
m & p Xylene by GC	<0.08	<0.08	<0.8	<0.8	-	-	-
o Xylene by GC	<0.03	<0.03	<0.3	<0.3	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Jul-2018
pH (pH Units)	8.67
Conductivity (µS/cm)	219.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.852

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844995
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-H14
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000855	<0.0005	0.00855	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0114	<0.001	0.114	<0.01	-	-	-
Copper	0.0126	<0.0003	0.126	<0.003	-	-	-
Lead	0.00115	<0.0002	0.0115	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00163	<0.0004	0.0163	<0.004	-	-	-
Selenium	0.00156	<0.001	0.0156	<0.01	-	-	-
Vanadium	0.00451	<0.001	0.0451	<0.01	-	-	-
Zinc	0.0101	<0.001	0.101	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000388	<0.00001	0.000388	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000344	<0.000005	0.000344	<0.00005	-	-	-
Anthracene by GCMS	0.00000891	<0.000005	0.0000891	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000443	<0.000005	0.000443	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000299	<0.000005	0.000299	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000156	<0.000082	0.00156	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	1,020.00
Temperature (°C)	23.90
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17844995
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-H14
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	1,020.00
Temperature (°C)	23.90
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	15.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86.7
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17845004
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-H14
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	2.37	<0.2	23.7	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0165	<0.0005	0.165	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00143	<0.001	0.0143	<0.01	-	-	-
Copper	0.011	<0.0003	0.11	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00299	<0.0004	0.0299	<0.004	-	-	-
Selenium	0.00272	<0.001	0.0272	<0.01	-	-	-
Vanadium	0.0754	<0.001	0.754	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.343	<0.019	3.43	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000213	<0.00001	0.000213	<0.0001	-	-	-
Acenaphthene by GCMS	0.000152	<0.000005	0.00152	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000065	<0.000005	0.00065	<0.00005	-	-	-
Anthracene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000968	<0.000005	0.000968	<0.00005	-	-	-
Fluorene by GCMS	0.0000707	<0.000005	0.000707	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000523	<0.000005	0.000523	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000969	<0.000005	0.0000969	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000646	<0.000002	0.0000646	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000492	<0.000082	0.00492	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.117	<0.05	1.17	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	10.07
Conductivity (µS/cm)	247.00
Temperature (°C)	24.00
Volume Leachant (Litres)	0.886

Mcerts Certification does not apply to leachates
12/07/2018 17:16:35

17:15:57 12/07/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180629-96	**Client Reference:**		**Report Number:**	464053
Location:	Llanwern	**Order Number:**	LLA454	**Superseded Report:**	463775

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	15.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86.7
Particle Size <4mm	>95%		

Case	
SDG	180629-96
Lab Sample Number(s)	17845004
Sampled Date	28-Jun-2018
Customer Sample Ref.	40A-H14
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C10-C12	0.053	<0.01	0.53	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.036	<0.01	0.36	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.118	<0.01	1.18	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Jun-2018
pH (pH Units)	10.07
Conductivity (µS/cm)	247.00
Temperature (°C)	24.00
Volume Leachant (Litres)	0.886

Mcerts Certification does not apply to leachates
12/07/2018 17:16:35

17:15:57 12/07/2018

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG: 180629-96 | Client Reference: | Report Number: 464053
Location: Llanwern | Order Number: LLA454 | Superseded Report: 463775

Test Completion Dates

Lab Sample No(s)	17844959	17844964	17844968	17844931	17844936	17844954	17844950	17844925	17844908	17844916
Customer Sample Ref.	40A-D11	40A-D11	40A-D11-V	40A-F12	40A-F12	40A-F12	40A-F12-V	40A-G12	40A-G15	40A-G15
AGS Ref.										
Depth	0.50 - 0.50	2.60 - 2.60	0.00 - 0.00	0.50 - 0.50	2.30 - 2.30	1.00 - 1.00	1.70 - 1.70	1.00 - 1.00	0.70 - 0.70	1.70 - 1.70
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	04-Jul-2018				04-Jul-2018	04-Jul-2018		04-Jul-2018		04-Jul-2018
Ammoniacal Nitrogen	04-Jul-2018	05-Jul-2018		05-Jul-2018	04-Jul-2018	04-Jul-2018		05-Jul-2018	05-Jul-2018	05-Jul-2018
Ammonium Soil by Titration	06-Jul-2018	06-Jul-2018	09-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	09-Jul-2018	06-Jul-2018	06-Jul-2018	04-Jul-2018
Anions by Kone (soil)	03-Jul-2018				03-Jul-2018	03-Jul-2018		03-Jul-2018		03-Jul-2018
Asbestos ID in Solid Samples	04-Jul-2018				03-Jul-2018	04-Jul-2018		04-Jul-2018		03-Jul-2018
CEN 10:1 Leachate (1 Stage)	30-Jun-2018	30-Jun-2018		06-Jul-2018	30-Jun-2018	30-Jun-2018		30-Jun-2018	02-Jul-2018	02-Jul-2018
CEN Readings	03-Jul-2018	03-Jul-2018		03-Jul-2018	02-Jul-2018	02-Jul-2018		03-Jul-2018	03-Jul-2018	03-Jul-2018
Cyanide Comp/Free/Total/Thiocyanate	06-Jul-2018	06-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018
Dissolved Metals by ICP-MS	06-Jul-2018	06-Jul-2018		06-Jul-2018	06-Jul-2018	06-Jul-2018		06-Jul-2018	06-Jul-2018	06-Jul-2018
EPH CWG (Aliphatic) Aqueous GC (W)	05-Jul-2018	05-Jul-2018		05-Jul-2018	05-Jul-2018	05-Jul-2018		05-Jul-2018	05-Jul-2018	05-Jul-2018
EPH CWG (Aliphatic) GC (S)	05-Jul-2018	04-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018	04-Jul-2018	05-Jul-2018	04-Jul-2018	05-Jul-2018	05-Jul-2018
EPH CWG (Aromatic) Aqueous GC (W)	05-Jul-2018	05-Jul-2018		05-Jul-2018	05-Jul-2018	05-Jul-2018		05-Jul-2018	05-Jul-2018	05-Jul-2018
EPH CWG (Aromatic) GC (S)	05-Jul-2018	04-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018	04-Jul-2018	05-Jul-2018	04-Jul-2018	05-Jul-2018	05-Jul-2018
GRO by GC-FID (S)	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018
GRO by GC-FID (W)	04-Jul-2018	04-Jul-2018		04-Jul-2018	05-Jul-2018	05-Jul-2018		06-Jul-2018	04-Jul-2018	04-Jul-2018
Mercury Dissolved	06-Jul-2018	06-Jul-2018		06-Jul-2018	06-Jul-2018	04-Jul-2018		06-Jul-2018	06-Jul-2018	06-Jul-2018
Metals in solid samples by OES	03-Jul-2018	03-Jul-2018	05-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	05-Jul-2018	04-Jul-2018	04-Jul-2018	03-Jul-2018
PAH by GCMS	03-Jul-2018	03-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018
PAH Spec MS - Aqueous (W)	05-Jul-2018	05-Jul-2018		05-Jul-2018	04-Jul-2018	04-Jul-2018		05-Jul-2018	05-Jul-2018	05-Jul-2018
pH	04-Jul-2018	04-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	03-Jul-2018	06-Jul-2018
pH Value	04-Jul-2018	04-Jul-2018		04-Jul-2018	03-Jul-2018	03-Jul-2018		04-Jul-2018	04-Jul-2018	04-Jul-2018
Phenols by HPLC (S)	05-Jul-2018	05-Jul-2018	06-Jul-2018	03-Jul-2018	05-Jul-2018	06-Jul-2018	06-Jul-2018	05-Jul-2018	04-Jul-2018	06-Jul-2018
Sample description	29-Jun-2018	29-Jun-2018	03-Jul-2018	29-Jun-2018	29-Jun-2018	30-Jun-2018	03-Jul-2018	30-Jun-2018	29-Jun-2018	29-Jun-2018
Total Organic Carbon	02-Jul-2018	02-Jul-2018	05-Jul-2018	03-Jul-2018	02-Jul-2018	02-Jul-2018	05-Jul-2018	02-Jul-2018	03-Jul-2018	02-Jul-2018
Total Sulphate	04-Jul-2018				03-Jul-2018	04-Jul-2018		04-Jul-2018		04-Jul-2018
Total Sulphur	02-Jul-2018				02-Jul-2018	02-Jul-2018		02-Jul-2018		02-Jul-2018
TPH CWG (W)	05-Jul-2018	05-Jul-2018		05-Jul-2018	05-Jul-2018	05-Jul-2018		06-Jul-2018	05-Jul-2018	05-Jul-2018
TPH CWG GC (S)	05-Jul-2018	04-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018	04-Jul-2018	05-Jul-2018	04-Jul-2018	05-Jul-2018	05-Jul-2018
VOC MS (S)	03-Jul-2018	03-Jul-2018	05-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	05-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018

Lab Sample No(s)	17844890	17844894	17844870	17844876	17844920	17844898	17844885	17844995	17845004	17844817
Customer Sample Ref.	40A-G16	40A-G16	40A-G17	40A-G17	40A-G15-V	40A-G16-V	40A-G17-V	40A-H14	40A-H14	40A-H14-V
AGS Ref.										
Depth	2.00 - 2.00	0.50 - 0.50	3.30 - 3.30	0.50 - 0.50	3.20 - 3.20	0.90 - 0.90	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		04-Jul-2018	04-Jul-2018					04-Jul-2018		
Ammoniacal Nitrogen	05-Jul-2018	05-Jul-2018	05-Jul-2018	04-Jul-2018				05-Jul-2018	05-Jul-2018	
Ammonium Soil by Titration	06-Jul-2018	04-Jul-2018	06-Jul-2018	06-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	06-Jul-2018	04-Jul-2018	09-Jul-2018
Anions by Kone (soil)		04-Jul-2018	03-Jul-2018					03-Jul-2018		
Asbestos ID in Solid Samples		04-Jul-2018	04-Jul-2018					04-Jul-2018		
CEN 10:1 Leachate (1 Stage)	03-Jul-2018	03-Jul-2018	30-Jun-2018	30-Jun-2018				30-Jun-2018	30-Jun-2018	
CEN Readings	04-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018				03-Jul-2018	03-Jul-2018	
Cyanide Comp/Free/Total/Thiocyanate	06-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018
Dissolved Metals by ICP-MS	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018				06-Jul-2018	06-Jul-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	06-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018				05-Jul-2018	05-Jul-2018	
EPH CWG (Aliphatic) GC (S)	05-Jul-2018	05-Jul-2018	04-Jul-2018	04-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018
EPH CWG (Aromatic) Aqueous GC (W)	06-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018				05-Jul-2018	05-Jul-2018	
EPH CWG (Aromatic) GC (S)	05-Jul-2018	05-Jul-2018	04-Jul-2018	04-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018
GRO by GC-FID (S)	03-Jul-2018	03-Jul-2018	04-Jul-2018	03-Jul-2018	05-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018
GRO by GC-FID (W)	05-Jul-2018	05-Jul-2018	06-Jul-2018	04-Jul-2018				06-Jul-2018	04-Jul-2018	
Mercury Dissolved	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018				06-Jul-2018	06-Jul-2018	
Metals in solid samples by OES	04-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018	04-Jul-2018	04-Jul-2018	05-Jul-2018
PAH by GCMS	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	05-Jul-2018	04-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018
PAH Spec MS - Aqueous (W)	06-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018				05-Jul-2018	05-Jul-2018	
pH	04-Jul-2018	03-Jul-2018	04-Jul-2018	01-Jul-2018	05-Jul-2018	04-Jul-2018	04-Jul-2018	06-Jul-2018	04-Jul-2018	04-Jul-2018
pH Value	05-Jul-2018	05-Jul-2018	04-Jul-2018	04-Jul-2018				04-Jul-2018	04-Jul-2018	
Phenols by HPLC (S)	06-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	04-Jul-2018	06-Jul-2018
Sample description	30-Jun-2018	30-Jun-2018	29-Jun-2018	29-Jun-2018	03-Jul-2018	03-Jul-2018	02-Jul-2018	29-Jun-2018	29-Jun-2018	02-Jul-2018
Total Organic Carbon	03-Jul-2018	03-Jul-2018	02-Jul-2018	02-Jul-2018	06-Jul-2018	05-Jul-2018	04-Jul-2018	02-Jul-2018	03-Jul-2018	05-Jul-2018
Total Sulphate		05-Jul-2018	03-Jul-2018					03-Jul-2018		
Total Sulphur		03-Jul-2018	03-Jul-2018					03-Jul-2018		
TPH CWG (W)	06-Jul-2018	06-Jul-2018	06-Jul-2018	05-Jul-2018				06-Jul-2018	05-Jul-2018	
TPH CWG GC (S)	05-Jul-2018	05-Jul-2018	04-Jul-2018	04-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018
VOC MS (S)	05-Jul-2018	05-Jul-2018	03-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018

Validated

CERTIFICATE OF ANALYSIS

SDG: 180629-96 **Client Reference:** **Report Number:** 464053
Location: Llanwern **Order Number:** LLA454 **Superseded Report:** 463775

Lab Sample No(s)	17844840	17844846	17844826	17844856	17844863	17844851	17844833	17844810	17844881	17844986
Customer Sample Ref.	40A-I15	40A-I15	40A-I16	40A-I17	40A-I18	40A-I15-V	40A-I16-V	40A-J14	40A-J14	40A-JK16
AGS Ref.										
Depth	1.50 - 1.50	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.40 - 0.40	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018			04-Jul-2018		06-Jul-2018
Ammoniacal Nitrogen	04-Jul-2018	04-Jul-2018	04-Jul-2018	05-Jul-2018	05-Jul-2018			04-Jul-2018	05-Jul-2018	06-Jul-2018
Ammonium Soil by Titration	06-Jul-2018	04-Jul-2018	04-Jul-2018	06-Jul-2018	06-Jul-2018	09-Jul-2018	09-Jul-2018	04-Jul-2018	06-Jul-2018	06-Jul-2018
Anions by Kone (soil)	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018			03-Jul-2018		06-Jul-2018
Asbestos ID in Solid Samples	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018			04-Jul-2018		05-Jul-2018
Asbestos Quantification - Full			11-Jul-2018							
CEN 10:1 Leachate (1 Stage)	30-Jun-2018	30-Jun-2018	30-Jun-2018	30-Jun-2018	30-Jun-2018			30-Jun-2018	30-Jun-2018	04-Jul-2018
CEN Readings	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	03-Jul-2018			03-Jul-2018	03-Jul-2018	05-Jul-2018
Cyanide Comp/Free/Total/Thiocyanate	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	05-Jul-2018	06-Jul-2018	09-Jul-2018
Dissolved Metals by ICP-MS	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018			06-Jul-2018	06-Jul-2018	06-Jul-2018
EPH CWG (Aliphatic) Aqueous GC (W)	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018			05-Jul-2018	05-Jul-2018	06-Jul-2018
EPH CWG (Aliphatic) GC (S)	05-Jul-2018	05-Jul-2018	04-Jul-2018	05-Jul-2018	04-Jul-2018	05-Jul-2018	05-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018
EPH CWG (Aromatic) Aqueous GC (W)	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018			05-Jul-2018	05-Jul-2018	06-Jul-2018
EPH CWG (Aromatic) GC (S)	05-Jul-2018	05-Jul-2018	04-Jul-2018	05-Jul-2018	04-Jul-2018	05-Jul-2018	05-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018
GRO by GC-FID (S)	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	05-Jul-2018	05-Jul-2018	04-Jul-2018	04-Jul-2018
GRO by GC-FID (W)	05-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018	06-Jul-2018			04-Jul-2018	04-Jul-2018	06-Jul-2018
Mercury Dissolved	06-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	06-Jul-2018			06-Jul-2018	06-Jul-2018	06-Jul-2018
Metals in solid samples by OES	03-Jul-2018	03-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	05-Jul-2018	05-Jul-2018	04-Jul-2018	03-Jul-2018	05-Jul-2018
PAH by GCMS	03-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018	03-Jul-2018	04-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	05-Jul-2018
PAH Spec MS - Aqueous (W)	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	05-Jul-2018			05-Jul-2018	05-Jul-2018	06-Jul-2018
pH	03-Jul-2018	06-Jul-2018	04-Jul-2018	03-Jul-2018	01-Jul-2018	04-Jul-2018	04-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018
pH Value	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	04-Jul-2018			04-Jul-2018	04-Jul-2018	06-Jul-2018
Phenols by HPLC (S)	04-Jul-2018	03-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	03-Jul-2018	03-Jul-2018	05-Jul-2018
Sample description	30-Jun-2018	30-Jun-2018	29-Jun-2018	29-Jun-2018	29-Jun-2018	02-Jul-2018	02-Jul-2018	29-Jun-2018	29-Jun-2018	30-Jun-2018
Total Organic Carbon	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	02-Jul-2018	05-Jul-2018	05-Jul-2018	02-Jul-2018	02-Jul-2018	06-Jul-2018
Total Sulphate	03-Jul-2018	04-Jul-2018	04-Jul-2018	06-Jul-2018	04-Jul-2018			04-Jul-2018		06-Jul-2018
Total Sulphur	03-Jul-2018	02-Jul-2018	02-Jul-2018	03-Jul-2018	03-Jul-2018			02-Jul-2018		05-Jul-2018
TPH CWG (W)	05-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018	06-Jul-2018			05-Jul-2018	05-Jul-2018	06-Jul-2018
TPH CWG GC (S)	05-Jul-2018	05-Jul-2018	04-Jul-2018	05-Jul-2018	04-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	04-Jul-2018	04-Jul-2018
VOC MS (S)	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	03-Jul-2018	05-Jul-2018	03-Jul-2018	03-Jul-2018	05-Jul-2018

Lab Sample No(s)	17844990	17844943	17844973	17844981
Customer Sample Ref.	40A-JK16-V	40A-J14-V	40A-L15	40A-L15-V
AGS Ref.				
Depth	1.50 - 1.50	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)			04-Jul-2018	
Ammoniacal Nitrogen			05-Jul-2018	
Ammonium Soil by Titration	09-Jul-2018	09-Jul-2018	06-Jul-2018	09-Jul-2018
Anions by Kone (soil)			03-Jul-2018	
Asbestos ID in Solid Samples			04-Jul-2018	
Asbestos Quantification - Full			11-Jul-2018	
CEN 10:1 Leachate (1 Stage)			30-Jun-2018	
CEN Readings			03-Jul-2018	
Cyanide Comp/Free/Total/Thiocyanate	09-Jul-2018	06-Jul-2018	05-Jul-2018	09-Jul-2018
Dissolved Metals by ICP-MS			06-Jul-2018	
EPH CWG (Aliphatic) Aqueous GC (W)			05-Jul-2018	
EPH CWG (Aliphatic) GC (S)	06-Jul-2018	06-Jul-2018	04-Jul-2018	06-Jul-2018
EPH CWG (Aromatic) Aqueous GC (W)			05-Jul-2018	
EPH CWG (Aromatic) GC (S)	06-Jul-2018	06-Jul-2018	04-Jul-2018	06-Jul-2018
GRO by GC-FID (S)	06-Jul-2018	06-Jul-2018	04-Jul-2018	05-Jul-2018
GRO by GC-FID (W)			06-Jul-2018	
Mercury Dissolved			05-Jul-2018	
Metals in solid samples by OES	06-Jul-2018	09-Jul-2018	03-Jul-2018	06-Jul-2018
PAH by GCMS	06-Jul-2018	06-Jul-2018	03-Jul-2018	06-Jul-2018
PAH Spec MS - Aqueous (W)			05-Jul-2018	
pH	05-Jul-2018	04-Jul-2018	03-Jul-2018	05-Jul-2018
pH Value			03-Jul-2018	
Phenols by HPLC (S)	09-Jul-2018	06-Jul-2018	03-Jul-2018	09-Jul-2018
Sample description	04-Jul-2018	02-Jul-2018	29-Jun-2018	04-Jul-2018
Total Organic Carbon	06-Jul-2018	10-Jul-2018	02-Jul-2018	06-Jul-2018
Total Sulphate			04-Jul-2018	
Total Sulphur			03-Jul-2018	
TPH CWG (W)			06-Jul-2018	
TPH CWG GC (S)	06-Jul-2018	06-Jul-2018	04-Jul-2018	06-Jul-2018
VOC MS (S)	06-Jul-2018	06-Jul-2018	03-Jul-2018	06-Jul-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors
employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjecte to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
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SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	12 July 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180704-43
Your Reference:	
Location:	Llanwern
Report No:	464004

We received 20 samples on Wednesday July 04, 2018 and 20 of these samples were scheduled for analysis which was completed on Thursday July 12, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17868704	40A-F19		1.00 - 1.00	03/07/2018
17868708	40A-F19		2.00 - 2.00	03/07/2018
17868791	40A-FG18		1.00 - 1.00	03/07/2018
17868690	40A-FG18		2.00 - 2.00	03/07/2018
17868697	40A-FG18-V		2.90 - 2.90	03/07/2018
17868716	40A-F19-V		4.60 - 4.60	03/07/2018
17868735	40A-G19		0.50 - 0.50	03/07/2018
17868740	40A-G19		1.50 - 1.50	03/07/2018
17868745	40A-G19		2.00 - 2.00	03/07/2018
17868755	40A-G19-V		3.50 - 3.50	03/07/2018
17868725	40A-H16		0.50 - 0.50	03/07/2018
17868683	40A-H19		0.50 - 0.50	03/07/2018
17868750	40A-H19		1.00 - 1.00	03/07/2018
17868759	40A-H19		1.60 - 1.60	03/07/2018
17868731	40A-H16-V		1.00 - 1.00	03/07/2018
17868763	40A-H19-V		3.80 - 3.80	03/07/2018
17868768	40A-I19		0.50 - 0.50	03/07/2018
17868773	40A-I19		1.30 - 1.30	03/07/2018
17868779	40A-I19		2.00 - 2.00	03/07/2018
17868784	40A-I19-V		4.30 - 4.30	03/07/2018

Maximum Sample/Coolbox Temperature (°C) : **13.4**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			17868704	40A-F19		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17868708	40A-F19		2.00 - 2.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17868791	40A-FG18		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17868690	40A-FG18		2.00 - 2.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17868697	40A-FG18-V		2.90 - 2.90	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17868716	40A-F19-V		4.60 - 4.60	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			17868735	40A-G19		0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 7		X				X												
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 14	X			X			X			X							X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 20		X			X			X			X			X		X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 7		X						X												
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 7	X						X													
CEN Readings	All	NDPs: 0 Tests: 14	X			X			X			X							X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 34	X	X		X	X		X	X		X	X		X		X		X	X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 14	X			X			X			X							X			
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 14	X			X			X			X							X			
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 20		X			X			X			X			X		X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 14	X			X			X			X							X			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 20		X			X			X			X			X		X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 20			X			X			X			X			X		X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 14	X			X			X			X							X			
Mercury Dissolved	All	NDPs: 0 Tests: 14	X			X			X			X							X			

17868731	40A-H16-V		1.00 - 1.00	250g Amber Jar (ALE210)	S				x					x				x			x				
17868759	40A-H19		1.60 - 1.60	60g VOC (ALE215)	S																	x			
				250g Amber Jar (ALE210)	S	x			x		x				x				x			x				
				1kg TUB	S			x				x		x		x		x			x				x	x
17868750	40A-H19		1.00 - 1.00	60g VOC (ALE215)	S																	x			
				250g Amber Jar (ALE210)	S				x					x				x			x				
				1kg TUB	S			x						x		x		x			x				x	x
17868683	40A-H19		0.50 - 0.50	60g VOC (ALE215)	S																	x			
				250g Amber Jar (ALE210)	S	x			x		x				x				x			x				
				1kg TUB	S			x				x		x		x		x			x				x	x
17868725	40A-H16		0.50 - 0.50	60g VOC (ALE215)	S																	x			
				250g Amber Jar (ALE210)	S	x			x		x				x				x			x				
				1kg TUB	S			x				x		x		x		x			x				x	x
17868755	40A-G19-V		3.50 - 3.50	60g VOC (ALE215)	S																	x			
				250g Amber Jar (ALE210)	S				x					x				x			x				
17868745	40A-G19		2.00 - 2.00	60g VOC (ALE215)	S																	x			
				250g Amber Jar (ALE210)	S				x					x				x			x				
				1kg TUB	S			x						x		x		x			x				x	x
17868740	40A-G19		1.50 - 1.50	60g VOC (ALE215)	S																	x			
				250g Amber Jar (ALE210)	S	x			x		x				x				x			x				
				1kg TUB	S			x				x		x		x		x			x				x	x

Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17868704			17868708			17868791			17868690			17868697			17868716		17868735	
Customer Sample Reference			40A-F19			40A-F19			40A-FG18			40A-FG18			40A-FG18-V			40A-F19-V		40A-G19	
AGS Reference																					
Depth (m)			1.00 - 1.00			2.00 - 2.00			1.00 - 1.00			2.00 - 2.00			2.90 - 2.90			4.60 - 4.60		0.50 - 0.50	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
PAH by GCMS	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 14	X			X			X			X							X		
pH	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
pH Value	All	NDPs: 0 Tests: 14	X			X			X			X							X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
Sample description	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
Total Sulphate	All	NDPs: 0 Tests: 7		X						X											
Total Sulphur	All	NDPs: 0 Tests: 7		X						X											
TPH CWG (W)	All	NDPs: 0 Tests: 14	X			X			X			X							X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 20		X			X			X			X		X		X			X	
VOC MS (S)	All	NDPs: 0 Tests: 20			X			X			X			X		X		X			X

17868731	40A-H16-V		1.00 - 1.00	250g Amber Jar (ALE210)	S		x		x			x			x		x		x				x	
17868759	40A-H19		1.60 - 1.60	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x		x		x		x	
				1kg TUB	S					x			x									x		
17868750	40A-H19		1.00 - 1.00	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x		x				x	
				1kg TUB	S					x			x									x		
17868683	40A-H19		0.50 - 0.50	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x		x		x		x	
				1kg TUB	S					x			x									x		
17868725	40A-H16		0.50 - 0.50	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x		x		x		x	
				1kg TUB	S					x			x									x		
17868755	40A-G19-V		3.50 - 3.50	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x		x				x	
17868745	40A-G19		2.00 - 2.00	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x		x				x	
				1kg TUB	S					x			x									x		
17868740	40A-G19		1.50 - 1.50	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x		x		x		x	
				1kg TUB	S					x			x									x		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17868731	17868763		17868768			17868773			17868779			17868784	
Customer Sample Reference			40A-H16-V	40A-H19-V		40A-I19			40A-I19			40A-I19			40A-I19-V	
AGS Reference																
Depth (m)			1.00 - 1.00	3.80 - 3.80		0.50 - 0.50			1.30 - 1.30			2.00 - 2.00			4.30 - 4.30	
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 7								X						
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 14				X			X			X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 20		X			X			X			X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 7								X						
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 7							X							
CEN Readings	All	NDPs: 0 Tests: 14				X			X			X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 34		X		X	X		X	X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 14				X			X			X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 14				X			X			X				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 20		X			X			X			X		X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 14				X			X			X				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 20		X			X			X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 20	X		X			X			X			X		X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 14				X			X			X				
Mercury Dissolved	All	NDPs: 0 Tests: 14				X			X			X				

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			17868731	17868763		17868768			17868773			17868779		17868784
Customer Sample Reference			40A-H16-V	40A-H19-V		40A-I19			40A-I19			40A-I19		40A-I19-V
AGS Reference														
Depth (m)			1.00 - 1.00	3.80 - 3.80		0.50 - 0.50			1.30 - 1.30			2.00 - 2.00		4.30 - 4.30
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 20		X			X			X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 20		X			X			X			X		X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 14				X			X			X				
pH	All	NDPs: 0 Tests: 20		X			X			X			X		X	
pH Value	All	NDPs: 0 Tests: 14				X			X			X				
Phenols by HPLC (S)	All	NDPs: 0 Tests: 20		X			X			X			X		X	
Sample description	All	NDPs: 0 Tests: 20		X			X			X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 20		X			X			X			X		X	
Total Sulphate	All	NDPs: 0 Tests: 7								X						
Total Sulphur	All	NDPs: 0 Tests: 7								X						
TPH CWG (W)	All	NDPs: 0 Tests: 14				X			X			X				
TPH CWG GC (S)	All	NDPs: 0 Tests: 20		X			X			X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 20	X		X			X			X			X		X

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17868704	40A-F19	1.00 - 1.00	Dark Brown	Loamy Sand	Crushed Brick	Stones
17868708	40A-F19	2.00 - 2.00	Dark Brown	Stone/Soil	Stones	Vegetation
17868690	40A-FG18	2.00 - 2.00	Dark Brown	Sand	Crushed Brick	Stones
17868791	40A-FG18	1.00 - 1.00	Light Brown	Loamy Sand	Crushed Brick	Stones
17868697	40A-FG18-V	2.90 - 2.90	Grey	Silty Clay	Stones	Vegetation
17868716	40A-F19-V	4.60 - 4.60	Black	Loamy Sand	Vegetation	Stones
17868735	40A-G19	0.50 - 0.50	Dark Brown	Sand	Stones	N/A
17868740	40A-G19	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
17868745	40A-G19	2.00 - 2.00	Dark Brown	Sand	Stones	N/A
17868755	40A-G19-V	3.50 - 3.50	Grey	Silty Clay	None	None
17868725	40A-H16	0.50 - 0.50	Dark Brown	Loamy Sand	Crushed Brick	Stones
17868683	40A-H19	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
17868750	40A-H19	1.00 - 1.00	Dark Brown	Sand	Stones	N/A
17868759	40A-H19	1.60 - 1.60	Grey	Sand	Stones	Concrete/Aggregate
17868731	40A-H16-V	1.00 - 1.00	Grey	Silty Clay	Stones	Vegetation
17868763	40A-H19-V	3.80 - 3.80	Grey	Silty Clay	None	None
17868768	40A-I19	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
17868773	40A-I19	1.30 - 1.30	Dark Brown	Sand	Stones	Concrete/Aggregate
17868779	40A-I19	2.00 - 2.00	Dark Brown	Sand	Stones	Concrete/Aggregate
17868784	40A-I19-V	4.30 - 4.30	Grey	Silty Clay	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-F19	40A-F19	40A-FG18	40A-FG18	40A-FG18-V	40A-F19-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	4.60 - 4.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018
			SDG Ref	180704-43	180704-43	180704-43	180704-43	180704-43	180704-43
			Lab Sample No.(s)	17868704	17868708	17868791	17868690	17868697	17868716
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	6.6	16	6.5	35	79
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	340 #	<12 M	<12 M	691 M	818 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.119		0.0688			
Sulphate, Total potential	<0.06 %	TM132		0.357		0.206			
Soil Organic Matter (SOM)	<0.35 %	TM132		5.69 #	2.59 #	2.64 #	9.02 #	3.72 #	51 #
pH	1 pH Units	TM133		8.17 M	8.78 #	8.31 M	8.95 M	6.86 M	7.38 M
Cyanide, Total	<1 mg/kg	TM153		10.6 M	1.5 #	3.56 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13 M	5.47 #	17.5 M	14 M	12.5 M	9.93 M
Cadmium	<0.02 mg/kg	TM181		0.742 M	<0.02 #	0.0848 M	<0.2 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		13.1 M	81.5 #	12 M	28.7 M	29.5 M	3.77 M
Copper	<1.4 mg/kg	TM181		35 M	<1.4 #	24.3 M	30.8 M	13.3 M	11.7 M
Iron	<1000 mg/kg	TM181		63300 #	44900 #	30600 #	123000 #	29300 #	23500 #
Lead	<0.7 mg/kg	TM181		78.3 M	6.39 #	23 M	48.8 M	26.4 M	8.28 M
Manganese	<0.13 mg/kg	TM181		2130 M	3520 #	580 M	3810 M	305 M	336 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 #	<0.14 M	<1.4 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		28 M	32.9 #	41.5 M	37.8 M	34.4 M	23 M
Selenium	<1 mg/kg	TM181		<1 #	1.34 #	<1 #	<10 #	<1 #	1.56 #
Vanadium	<0.2 mg/kg	TM181		50.4 #	184 #	35.2 #	108 #	50.3 #	21.1 #
Zinc	<1.9 mg/kg	TM181		416 M	65.5 #	101 M	176 M	90.9 M	35.7 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.216		0.0792			
Calcium	<21 mg/kg	TM224		77900		8570			
Magnesium	<8 mg/kg	TM224		15100		3700			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.118 M		0.0697 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G19	40A-G19	40A-G19	40A-G19-V	40A-H16	40A-H19
			Depth (m)	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	3.50 - 3.50	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018
			SDG Ref	180704-43	180704-43	180704-43	180704-43	180704-43	180704-43
			Lab Sample No.(s)	17868735	17868740	17868745	17868755	17868725	17868683
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	6.1	7.5	39	13	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		20.9 M	<12 M	<12 M	771 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0114 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.27			0.245	0.832
Sulphate, Total potential	<0.06 %	TM132			0.81			0.735	2.5
Soil Organic Matter (SOM)	<0.35 %	TM132		3.34 #	5.05 #	1.38 #	7.31 #	9.81 #	4.59 #
pH	1 pH Units	TM133		9 M	9.01 M	8.44 M	7.66 M	8.41 M	9.36 M
Cyanide, Total	<1 mg/kg	TM153		14.1 M	3.5 M	2.76 M	<1 M	47 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.5 M	14 M	7.79 M	16.2 M	23.5 M	15.8 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.02 M	0.31 M	1.61 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		<9 M	<9 M	1.23 M	32.1 M	15.1 M	88.2 M
Copper	<1.4 mg/kg	TM181		19.4 M	28.1 M	20.1 M	32.8 M	45 M	57.6 M
Iron	<1000 mg/kg	TM181		78700 #	172000 #	53700 #	25600 #	50900 #	133000 #
Lead	<0.7 mg/kg	TM181		31.1 M	185 M	22.9 M	39 M	631 M	106 M
Manganese	<0.13 mg/kg	TM181		6600 M	3680 M	1530 M	210 M	971 M	9040 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M	0.335 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		16.7 M	33.9 M	24.3 M	28.2 M	22.9 M	42.1 M
Selenium	<1 mg/kg	TM181		31.7 #	<10 #	7.85 #	<1 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		79.3 #	55.5 #	57.7 #	49.4 #	27.9 #	95.5 #
Zinc	<1.9 mg/kg	TM181		71.4 M	399 M	66.7 M	136 M	2450 M	434 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.567			0.201	1.01
Calcium	<21 mg/kg	TM224			118000			96400	115000
Magnesium	<8 mg/kg	TM224			14700			7360	17100
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.426 M			0.0988 M	1.5 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H19	40A-H19	40A-H16-V	40A-H19-V	40A-I19	40A-I19
			Depth (m)	1.00 - 1.00	1.60 - 1.60	1.00 - 1.00	3.80 - 3.80	0.50 - 0.50	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018
			SDG Ref	180704-43	180704-43	180704-43	180704-43	180704-43	180704-43
			Lab Sample No.(s)	17868750	17868759	17868731	17868763	17868768	17868773
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	11	30	39	10	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	135 M	1330 M	<12 M	31.2 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0163 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.375 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	0.114 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	0.505 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.568				4.72
Sulphate, Total potential	<0.06 %	TM132			1.7				14.2
Soil Organic Matter (SOM)	<0.35 %	TM132		1.22 #	0.931 #	1.29 #	6.05 #	0.607 #	0.728 #
pH	1 pH Units	TM133		10.1 M	10.1 M	7.81 M	8.42 M	7.86 M	8.65 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		5.39 M	5.44 M	10 M	12.4 M	7.17 M	3.95 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	0.22 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		26.4 M	21.3 M	26.7 M	34.5 M	<0.9 M	2.13 M
Copper	<1.4 mg/kg	TM181		<1.4 M	<1.4 M	10.1 M	31.5 M	7.81 M	<1.4 M
Iron	<1000 mg/kg	TM181		20500 #	18400 #	39900 #	30100 #	38500 #	36000 #
Lead	<0.7 mg/kg	TM181		23.2 M	30.9 M	25.6 M	37.4 M	5.81 M	12.2 M
Manganese	<0.13 mg/kg	TM181		7170 M	4310 M	737 M	308 M	3790 M	3950 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		4.34 M	4.65 M	34.3 M	30.2 M	6.83 M	4.29 M
Selenium	<1 mg/kg	TM181		5.96 #	5.71 #	<1 #	<1 #	4.73 #	6.23 #
Vanadium	<0.2 mg/kg	TM181		32 #	23 #	50.4 #	52.3 #	21.3 #	23.3 #
Zinc	<1.9 mg/kg	TM181		282 M	368 M	108 M	137 M	104 M	153 M
Sulphate, acid soluble (total)	<0.02 %	TM221			1.88				4.2
Calcium	<21 mg/kg	TM224			224000				147000
Magnesium	<8 mg/kg	TM224			31100				25900
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			1.45 M				1.61 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-I19	40A-I19-V				
			Depth (m)	2.00 - 2.00	4.30 - 4.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	03/07/2018	03/07/2018				
			Sample Time	00:00	00:00				
			Date Received	04/07/2018	04/07/2018				
			SDG Ref	180704-43	180704-43				
			Lab Sample No.(s)	17868779	17868784				
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	35				
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	1450 M				
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.107 M				
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.138 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.245 M				
Soil Organic Matter (SOM)	<0.35 %	TM132		0.374 #	4.22 #				
pH	1 pH Units	TM133		9.32 M	8.56 M				
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M				
Arsenic	<0.6 mg/kg	TM181		2.85 M	10.4 M				
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M				
Chromium	<0.9 mg/kg	TM181		1.52 M	34 M				
Copper	<1.4 mg/kg	TM181		<1.4 M	16.3 M				
Iron	<1000 mg/kg	TM181		19200 #	36300 #				
Lead	<0.7 mg/kg	TM181		7.44 M	27.6 M				
Manganese	<0.13 mg/kg	TM181		6350 M	292 M				
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M				
Nickel	<0.2 mg/kg	TM181		2 M	33.1 M				
Selenium	<1 mg/kg	TM181		8.26 #	<1 #				
Vanadium	<0.2 mg/kg	TM181		15.6 #	59.8 #				
Zinc	<1.9 mg/kg	TM181		113 M	107 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-F19	40A-F19	40A-FG18	40A-FG18	40A-FG18-V	40A-F19-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	4.60 - 4.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018
			SDG Ref	180704-43	180704-43	180704-43	180704-43	180704-43	180704-43
			Lab Sample No.(s)	17868704	17868708	17868791	17868690	17868697	17868716
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.8	89.3	88.7	94.1	86.4	96.5
Acenaphthene-d10 % recovery**	%	TM218		86.2	91.1	86.4	92	84.1	94.5
Phenanthrene-d10 % recovery**	%	TM218		97.6	97.1	95.3	101	97.7	107
Chrysene-d12 % recovery**	%	TM218		90.1	89.8	92.7	90.3	93.4	103
Perylene-d12 % recovery**	%	TM218		86.6	87.7	93.2	81.9	94.1	102
Naphthalene	<0.009 mg/kg	TM218		0.0725 M	0.169 #	0.0118 M	0.0406 M	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.024 M	<0.012 #	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0207 M	0.0499 #	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.02 M	0.0595 #	<0.01 M	0.0119 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.324 M	0.105 #	0.0213 M	0.158 M	<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.095 M	0.0365 #	<0.016 M	0.0385 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.781 M	0.0493 #	0.0475 M	0.21 M	<0.017 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.701 M	0.0365 #	0.0455 M	0.197 M	<0.015 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.266 M	<0.014 #	0.0188 M	0.0904 M	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.253 M	<0.01 #	0.0232 M	0.114 M	<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.329 M	<0.015 #	0.0265 M	0.142 M	<0.015 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.125 M	<0.014 #	<0.014 M	0.058 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.208 M	<0.015 #	<0.015 M	0.094 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.124 M	<0.018 #	<0.018 M	0.0615 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.046 M	<0.023 #	<0.023 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.149 M	<0.024 #	<0.024 M	0.0842 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.45	0.506	0.195	1.3	<0.118	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G19	40A-G19	40A-G19	40A-G19-V	40A-H16	40A-H19
			Depth (m)	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	3.50 - 3.50	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018
			SDG Ref	180704-43	180704-43	180704-43	180704-43	180704-43	180704-43
			Lab Sample No.(s)	17868735	17868740	17868745	17868755	17868725	17868683
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		98.9	99.3	105	85.1	88	89.6
Acenaphthene-d10 % recovery**	%	TM218		95.6	94.7	104	82.8	87.4	83.1
Phenanthrene-d10 % recovery**	%	TM218		94.9	94.3	109	94.2	86.3	81.8
Chrysene-d12 % recovery**	%	TM218		84.9	82.3	102	88.2	75.3	80.3
Perylene-d12 % recovery**	%	TM218		82.1	74.2	95.2	89.5	70.3	79
Naphthalene	<0.009 mg/kg	TM218		0.0117 M	0.0494 M	0.0209 M	<0.009 M	0.107 M	0.0263 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0151 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	<0.008 M	0.0135 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.012 M	<0.01 M	<0.01 M	0.0309 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.0524 M	0.144 M	0.0699 M	<0.015 M	0.255 M	0.0673 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.0325 M	<0.016 M	<0.016 M	0.0472 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.0387 M	0.202 M	0.0532 M	<0.017 M	0.186 M	0.107 M
Pyrene	<0.015 mg/kg	TM218		0.0332 M	0.182 M	0.0453 M	<0.015 M	0.164 M	0.125 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0185 M	0.124 M	0.0261 M	<0.014 M	0.0974 M	0.0734 M
Chrysene	<0.01 mg/kg	TM218		0.0298 M	0.161 M	0.0379 M	<0.01 M	0.165 M	0.0909 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0381 M	0.255 M	0.0396 M	<0.015 M	0.249 M	0.0928 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.073 M	0.0187 M	<0.014 M	0.0821 M	0.0404 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	0.107 M	0.0255 M	<0.015 M	0.107 M	0.0784 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0219 M	0.131 M	<0.018 M	<0.018 M	0.145 M	0.0779 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.029 M	<0.023 M	<0.023 M	0.0309 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.117 M	0.0269 M	<0.024 M	0.128 M	0.116 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.244	1.63	0.364	<0.118	1.81	0.895

Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H19	40A-H19	40A-H16-V	40A-H19-V	40A-I19	40A-I19
			Depth (m)	1.00 - 1.00	1.60 - 1.60	1.00 - 1.00	3.80 - 3.80	0.50 - 0.50	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018
			SDG Ref	180704-43	180704-43	180704-43	180704-43	180704-43	180704-43
			Lab Sample No.(s)	17868750	17868759	17868731	17868763	17868768	17868773
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.3	89.6	90.3	89.2	90.1	92.8
Acenaphthene-d10 % recovery**	%	TM218		87.7	86.4	87.8	88.3	85.9	91.3
Phenanthrene-d10 % recovery**	%	TM218		99.4	93.9	95.1	99.5	96.1	101
Chrysene-d12 % recovery**	%	TM218		94.2	90.5	92.9	97.9	92.1	96
Perylene-d12 % recovery**	%	TM218		94.5	91.1	93.5	101	92.2	97.7
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.0261 M	0.0224 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.0451 M	0.0326 M	<0.017 M	<0.017 M	<0.017 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.0525 M	0.0366 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.031 M	0.0166 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0365 M	0.0252 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0532 M	0.0303 M	<0.015 M	<0.015 M	<0.015 M	0.0177 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0275 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0493 M	0.0198 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0363 M	<0.018 M	<0.018 M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0564 M	0.033 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.414	0.216	<0.118	<0.118	<0.118	<0.118

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-I19	40A-I19-V				
			Depth (m)	2.00 - 2.00	4.30 - 4.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	03/07/2018	03/07/2018				
			Sample Time	00:00	00:00				
			Date Received	04/07/2018	04/07/2018				
			SDG Ref	180704-43	180704-43				
			Lab Sample No.(s)	17868779	17868784				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.1	84.7				
Acenaphthene-d10 % recovery**	%	TM218		84.2	87				
Phenanthrene-d10 % recovery**	%	TM218		93.8	96.8				
Chrysene-d12 % recovery**	%	TM218		89.6	94.6				
Perylene-d12 % recovery**	%	TM218		88.2	94.8				
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M				
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M				
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M				
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M				
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M				
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	<0.017 M				
Pyrene	<0.015 mg/kg	TM218		0.0175 M	<0.015 M				
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M				
Chrysene	<0.01 mg/kg	TM218		0.0146 M	<0.01 M				
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M				
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M				
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M				
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M				
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	<0.118				

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-F19	40A-F19	40A-FG18	40A-FG18	40A-FG18-V	40A-F19-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	4.60 - 4.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018
			SDG Ref	180704-43	180704-43	180704-43	180704-43	180704-43	180704-43
			Lab Sample No.(s)	17868704	17868708	17868791	17868690	17868697	17868716
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		83	84	103	93	127	65
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	8.46	<0.176	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	0.0663	<0.04	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	0.716	<0.04	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	0.762	<0.04	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.53	5.01	<0.1	2.01	<0.1	1.17
Aliphatics >C16-C21	<0.1 mg/kg	TM173		18.5	7.83	0.893	8.93	1.58	4.29
Aliphatics >C21-C35	<0.1 mg/kg	TM173		38	8.87	15.1	79.2	1.81	20
Aliphatics >C35-C44	<0.1 mg/kg	TM173		7.27	1.24	2.02	14	<0.1	0.456
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		69.4	22.9	18	104	3.39	25.9
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	6.37	<0.04	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	0.508	<0.04	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.05	4.25	0.713	2.23	<0.1	1.72
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.5	6.03	1.8	7.62	<0.1	6.55
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		30.8	4.86	7.6	44.4	7.87	162
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		17.3	1.28	1.72	18.3	1.26	14.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.13	<0.1	<0.1	6.84	<0.1	3.69
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		59.6	16.4	11.8	72.5	9.14	185
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		129	47.8	29.9	177	12.5	211

Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G19	40A-G19	40A-G19	40A-G19-V	40A-H16	40A-H19
			Depth (m)	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	3.50 - 3.50	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018
			SDG Ref	180704-43	180704-43	180704-43	180704-43	180704-43	180704-43
			Lab Sample No.(s)	17868735	17868740	17868745	17868755	17868725	17868683
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		107	84	96	105	78	106
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.044	<0.176	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.393	0.363	0.366	1.14	1.71	3.34
Aliphatics >C16-C21	<0.1 mg/kg	TM173		3.47	3.3	4.66	1.45	10.8	8.8
Aliphatics >C21-C35	<0.1 mg/kg	TM173		9.4	24.3	13.6	9.11	75.6	39.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		0.82	3.91	1.78	<0.1	16.2	4.31
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		14.1	31.9	20.5	11.7	104	56
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.01	<0.04	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.124	0.588	<0.1	<0.1	3.19	2.63
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.988	4.02	0.915	1.21	9	6.34
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		4.43	24.5	5.37	46.3	62.6	36.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		0.754	10.4	0.698	4.73	32.3	10.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	4.06	<0.1	<0.1	12.7	4.03
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		6.29	39.4	6.98	52.2	107	55.8
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		20.4	71.3	27.4	63.9	211	112

Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H19	40A-H19	40A-H16-V	40A-H19-V	40A-I19	40A-I19
			Depth (m)	1.00 - 1.00	1.60 - 1.60	1.00 - 1.00	3.80 - 3.80	0.50 - 0.50	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018
			SDG Ref	180704-43	180704-43	180704-43	180704-43	180704-43	180704-43
			Lab Sample No.(s)	17868750	17868759	17868731	17868763	17868768	17868773
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		117	114	104	88	113	111
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176	<0.176	<0.044	<0.176	<0.176
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.01	<0.04	<0.04
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.01	<0.04	<0.04
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.01	<0.04	<0.04
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.01	<0.04	<0.04
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	0.297	<0.1	<0.1	0.633	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		2.2	0.921	<0.1	<0.1	0.951	0.488
Aliphatics >C21-C35	<0.1 mg/kg	TM173		15.3	9.26	0.369	7.97	5.02	3.33
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.47	0.782	<0.1	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		18.9	11.3	0.369	7.97	6.61	3.82
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.01	<0.04	<0.04
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.01	<0.04	<0.04
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.01	<0.04	<0.04
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04	<0.04	<0.01	<0.04	<0.04
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.244	0.174	<0.1	<0.1	9.51	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1.25	0.652	<0.1	1.75	44.3	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		9.62	7.02	1.51	26.2	101	1.49
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		2.96	1.29	<0.1	9.83	35.7	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		0.994	<0.1	<0.1	2.89	15.1	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		14.1	9.14	1.51	37.7	190	1.49
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		33	20.4	1.87	45.7	197	5.31

Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-I19	40A-I19-V				
			Depth (m)	2.00 - 2.00	4.30 - 4.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	03/07/2018	03/07/2018				
			Sample Time	00:00	00:00				
			Date Received	04/07/2018	04/07/2018				
			SDG Ref	180704-43	180704-43				
			Lab Sample No.(s)	17868779	17868784				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		114	104				
GRO TOT (Moisture Corrected)	<0.044 mg/kg	TM089		<0.176	<0.176				
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.04	<0.04				
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.04	<0.04				
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.04	<0.04				
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.04	<0.04				
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.507	0.254				
Aliphatics >C16-C21	<0.1 mg/kg	TM173		2.61	0.479				
Aliphatics >C21-C35	<0.1 mg/kg	TM173		9.33	3.83				
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		12.4	4.56				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.04	<0.04				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.04	<0.04				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.04	0.0428				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.04	<0.04				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	0.383				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.648	0.901				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		4.25	12.4				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.07	1.14				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		5.97	14.8				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		18.4	19.4				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-F19	40A-F19	40A-FG18	40A-FG18	40A-FG18-V	40A-F19-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	4.60 - 4.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018
			SDG Ref	180704-43	180704-43	180704-43	180704-43	180704-43	180704-43
			Lab Sample No.(s)	17868704	17868708	17868791	17868690	17868697	17868716
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	104	113	110	98.3	106
Toluene-d8**	%	TM116		92.9	95.1	94.8	99.8	94.9	88.2
4-Bromofluorobenzene**	%	TM116		102	108	110	92.3	110	90.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 #	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 #	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	0.175 #	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	0.509 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	0.181 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 #	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	0.865	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-G19	40A-G19	40A-G19	40A-G19-V	40A-H16	40A-H19
			Depth (m)	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	3.50 - 3.50	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018
			SDG Ref	180704-43	180704-43	180704-43	180704-43	180704-43	180704-43
			Lab Sample No.(s)	17868735	17868740	17868745	17868755	17868725	17868683
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	105	108	112	107	104
Toluene-d8**	%	TM116		94.4	94.9	94.3	92.9	94.2	94.2
4-Bromofluorobenzene**	%	TM116		110	106	108	104	103	104
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-H19	40A-H19	40A-H16-V	40A-H19-V	40A-I19	40A-I19
			Depth (m)	1.00 - 1.00	1.60 - 1.60	1.00 - 1.00	3.80 - 3.80	0.50 - 0.50	1.30 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018	04/07/2018
			SDG Ref	180704-43	180704-43	180704-43	180704-43	180704-43	180704-43
			Lab Sample No.(s)	17868750	17868759	17868731	17868763	17868768	17868773
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	108	98	110	104	105
Toluene-d8**	%	TM116		94.9	94.8	94	93.2	95	94.8
4-Bromofluorobenzene**	%	TM116		110	109	109	114	109	110
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	40A-I19	40A-I19-V				
			Depth (m)	2.00 - 2.00	4.30 - 4.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	03/07/2018	03/07/2018				
			Sample Time	00:00	00:00				
			Date Received	04/07/2018	04/07/2018				
			SDG Ref	180704-43	180704-43				
			Lab Sample No.(s)	17868779	17868784				
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	99.3				
Toluene-d8**	%	TM116		95.5	93.1				
4-Bromofluorobenzene**	%	TM116		109	109				
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M				
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M				
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M				
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #				
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M				
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4				

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-F19 1.00 - 1.00 SOLID 03/07/2018 00:00:00 04/07/2018 13:59:16 180704-43 17868704 TM048	10/07/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-FG18 1.00 - 1.00 SOLID 03/07/2018 00:00:00 04/07/2018 14:45:34 180704-43 17868791 TM048	10/07/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-G19 1.50 - 1.50 SOLID 03/07/2018 00:00:00 04/07/2018 14:24:24 180704-43 17868740 TM048	10/07/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-H16 0.50 - 0.50 SOLID 03/07/2018 00:00:00 04/07/2018 14:39:40 180704-43 17868725 TM048	10/07/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-H19 0.50 - 0.50 SOLID 03/07/2018 00:00:00 04/07/2018 12:34:18 180704-43 17868683 TM048	10/07/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-H19 1.60 - 1.60 SOLID 03/07/2018 00:00:00 04/07/2018 12:36:50 180704-43 17868759 TM048	10/07/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180704-43 **Client Reference:** **Report Number:** 464004
Location: Llanwern **Order Number:** LLA455 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	40A-I19 1.30 - 1.30 SOLID 03/07/2018 00:00:00 04/07/2018 13:20:09 180704-43 17868773 TM048	10/07/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868683
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-H19
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000193	<0.00001	0.000193	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00165	<0.0005	0.0165	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00111	<0.001	0.0111	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.00143	<0.0002	0.0143	<0.002	-	-	-
Manganese	0.0108	<0.003	0.108	<0.03	-	-	-
Nickel	0.000744	<0.0004	0.00744	<0.004	-	-	-
Selenium	0.0109	<0.001	0.109	<0.01	-	-	-
Vanadium	0.0141	<0.001	0.141	<0.01	-	-	-
Zinc	0.00402	<0.001	0.0402	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.506	<0.019	5.06	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000165	<0.00001	0.000165	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000662	<0.000005	0.0000662	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000095	<0.000005	0.000095	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000106	<0.000005	0.000106	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000135	<0.000005	0.000135	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	8.42
Conductivity (µS/cm)	1,970.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

12/07/2018 14:40:16

14:39:45 12/07/2018

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868683
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-H19
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	8.42
Conductivity (µS/cm)	1,970.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

12/07/2018 14:40:16

14:39:45 12/07/2018

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868690
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-FG18
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000195	<0.00001	0.000195	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0108	<0.0005	0.108	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000823	<0.0003	0.00823	<0.003	-	-	-
Lead	0.000558	<0.0002	0.00558	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000587	<0.0004	0.00587	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.024	<0.001	0.24	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.528	<0.019	5.28	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000984	<0.000005	0.0000984	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000937	<0.000005	0.0000937	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	7.52
Conductivity (µS/cm)	71.60
Temperature (°C)	21.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

12/07/2018 14:40:16

14:39:45 12/07/2018

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868690
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-FG18
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	7.52
Conductivity (µS/cm)	71.60
Temperature (°C)	21.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

12/07/2018 14:40:16

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868704
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-F19
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	3.43	<0.2	34.3	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000325	<0.00001	0.000325	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00292	<0.0005	0.0292	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00129	<0.001	0.0129	<0.01	-	-	-
Copper	0.00211	<0.0003	0.0211	<0.003	-	-	-
Lead	0.00164	<0.0002	0.0164	<0.002	-	-	-
Manganese	0.0556	<0.003	0.556	<0.03	-	-	-
Nickel	0.000796	<0.0004	0.00796	<0.004	-	-	-
Selenium	0.00148	<0.001	0.0148	<0.01	-	-	-
Vanadium	0.00526	<0.001	0.0526	<0.01	-	-	-
Zinc	0.00888	<0.001	0.0888	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.243	<0.019	2.43	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000227	<0.00001	0.000227	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	0.00000866	<0.000005	0.0000866	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	7.72
Conductivity (µS/cm)	146.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

12/07/2018 14:40:16

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868704
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-F19
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	7.72
Conductivity (µS/cm)	146.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

12/07/2018 14:40:16

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868708
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-F19
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	8.16	<0.2	81.6	<2	-	-	-
Mercury Dissolved (CVAF)	0.00018	<0.00001	0.0018	<0.0001	-	-	-
Total Cyanide (W)	0.14	<0.05	1.4	<0.5	-	-	-
Arsenic	0.00194	<0.0005	0.0194	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00194	<0.001	0.0194	<0.01	-	-	-
Copper	0.00192	<0.0003	0.0192	<0.003	-	-	-
Lead	0.00332	<0.0002	0.0332	<0.002	-	-	-
Manganese	0.0233	<0.003	0.233	<0.03	-	-	-
Nickel	0.00221	<0.0004	0.0221	<0.004	-	-	-
Selenium	0.00111	<0.001	0.0111	<0.01	-	-	-
Vanadium	0.00373	<0.001	0.0373	<0.01	-	-	-
Zinc	0.0061	<0.001	0.061	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.709	<0.019	7.09	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000243	<0.00001	0.00243	<0.0001	-	-	-
Acenaphthene by GCMS	0.000062	<0.000005	0.00062	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000219	<0.000005	0.000219	<0.00005	-	-	-
Fluorene by GCMS	0.0000206	<0.000005	0.000206	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000872	<0.000005	0.0000872	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000261	<0.000002	0.0000261	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000369	<0.000082	0.00369	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.114	<0.05	1.14	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	7.85
Conductivity (µS/cm)	141.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868708
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-F19
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.022	<0.01	0.22	<0.1	-	-	-
Aliphatics >C10-C12	0.024	<0.01	0.24	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.037	<0.01	0.37	<0.1	-	-	-
Aromatics >EC10-EC12	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.114	<0.01	1.14	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	0.006	<0.005	0.06	<0.05	-	-	-
m & p Xylene by GC	0.012	<0.008	0.12	<0.08	-	-	-
o Xylene by GC	0.004	<0.003	0.04	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.016	<0.011	0.16	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	7.85
Conductivity (µS/cm)	141.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

12/07/2018 14:40:16

14:39:45 12/07/2018

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868725
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-H16
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000327	<0.00001	0.000327	<0.0001	-	-	-
Total Cyanide (W)	0.217	<0.05	2.17	<0.5	-	-	-
Arsenic	0.00455	<0.0005	0.0455	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000569	<0.0003	0.00569	<0.003	-	-	-
Lead	0.0014	<0.0002	0.014	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000457	<0.0004	0.00457	<0.004	-	-	-
Selenium	0.00174	<0.001	0.0174	<0.01	-	-	-
Vanadium	0.00398	<0.001	0.0398	<0.01	-	-	-
Zinc	0.0106	<0.001	0.106	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0966	<0.019	0.966	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000196	<0.00001	0.000196	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000075	<0.000005	0.000075	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000836	<0.000005	0.0000836	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000725	<0.000005	0.0000725	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000355	<0.000002	0.0000355	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000065	<0.000005	0.000065	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000083	<0.000082	0.00083	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	7.45
Conductivity (µS/cm)	141.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

12/07/2018 14:40:16

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868725
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-H16
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	7.45
Conductivity (µS/cm)	141.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868735
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-G19
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00103	<0.0005	0.0103	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00285	<0.0003	0.0285	<0.003	-	-	-
Lead	0.000351	<0.0002	0.00351	<0.002	-	-	-
Manganese	0.324	<0.003	3.24	<0.03	-	-	-
Nickel	0.000951	<0.0004	0.00951	<0.004	-	-	-
Selenium	0.0161	<0.001	0.161	<0.01	-	-	-
Vanadium	0.00363	<0.001	0.0363	<0.01	-	-	-
Zinc	0.00874	<0.001	0.0874	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.627	<0.019	6.27	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	8.09
Conductivity (µS/cm)	311.00
Temperature (°C)	21.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868735
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-G19
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	8.09
Conductivity (µS/cm)	311.00
Temperature (°C)	21.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868740
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-G19
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00578	<0.0005	0.0578	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0027	<0.001	0.027	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00826	<0.001	0.0826	<0.01	-	-	-
Vanadium	0.0205	<0.001	0.205	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000657	<0.000005	0.0000657	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000649	<0.000005	0.0000649	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000612	<0.000005	0.0000612	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000883	<0.000005	0.0000883	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000034	<0.000002	0.000034	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000102	<0.000005	0.000102	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	8.90
Conductivity (µS/cm)	134.00
Temperature (°C)	21.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868740
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-G19
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	8.90
Conductivity (µS/cm)	134.00
Temperature (°C)	21.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

12/07/2018 14:40:16

14:39:45 12/07/2018

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868745
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-G19
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00246	<0.0005	0.0246	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.132	<0.003	1.32	<0.03	-	-	-
Nickel	0.00193	<0.0004	0.0193	<0.004	-	-	-
Selenium	0.0136	<0.001	0.136	<0.01	-	-	-
Vanadium	0.00229	<0.001	0.0229	<0.01	-	-	-
Zinc	0.00255	<0.001	0.0255	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000027	<0.00001	0.00027	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000631	<0.000005	0.0000631	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	7.04
Conductivity (µS/cm)	260.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

12/07/2018 14:40:16

14:39:45 12/07/2018

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868745
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-G19
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.015	<0.01	0.15	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	7.04
Conductivity (µS/cm)	260.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	15.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86.7
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868750
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-H19
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000985	<0.0005	0.00985	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000542	<0.0004	0.00542	<0.004	-	-	-
Selenium	0.0149	<0.001	0.149	<0.01	-	-	-
Vanadium	0.0152	<0.001	0.152	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.826	<0.019	8.26	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000149	<0.00001	0.000149	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000658	<0.000005	0.0000658	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000662	<0.000005	0.0000662	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000906	<0.000005	0.0000906	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000716	<0.000005	0.0000716	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	8.89
Conductivity (µS/cm)	1,820.00
Temperature (°C)	22.50
Volume Leachant (Litres)	0.886

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	15.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86.7
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868750
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-H19
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	8.89
Conductivity (µS/cm)	1,820.00
Temperature (°C)	22.50
Volume Leachant (Litres)	0.886

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868759
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-H19
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000336	<0.0002	0.00336	<0.002	-	-	-
Manganese	0.00565	<0.003	0.0565	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00773	<0.001	0.0773	<0.01	-	-	-
Vanadium	0.0157	<0.001	0.157	<0.01	-	-	-
Zinc	0.00216	<0.001	0.0216	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000214	<0.00001	0.000214	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000728	<0.000005	0.0000728	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Fluorene by GCMS	0.00000512	<0.000005	0.0000512	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000726	<0.000005	0.0000726	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	9.58
Conductivity (µS/cm)	823.00
Temperature (°C)	22.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

12/07/2018 14:40:16

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868759
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-H19
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	9.58
Conductivity (µS/cm)	823.00
Temperature (°C)	22.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

12/07/2018 14:40:16

14:39:45 12/07/2018

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868768
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-I19
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000541	<0.0005	0.00541	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.042	<0.003	0.42	<0.03	-	-	-
Nickel	0.000808	<0.0004	0.00808	<0.004	-	-	-
Selenium	0.00768	<0.001	0.0768	<0.01	-	-	-
Vanadium	0.00111	<0.001	0.0111	<0.01	-	-	-
Zinc	0.00239	<0.001	0.0239	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	7.96
Conductivity (µS/cm)	2,030.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

12/07/2018 14:40:16

14:39:45 12/07/2018

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868768
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-I19
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	7.96
Conductivity (µS/cm)	2,030.00
Temperature (°C)	21.60
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868773
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-I19
Depth (m)	1.30 - 1.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000521	<0.0005	0.00521	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000292	<0.0002	0.00292	<0.002	-	-	-
Manganese	0.0354	<0.003	0.354	<0.03	-	-	-
Nickel	0.000686	<0.0004	0.00686	<0.004	-	-	-
Selenium	0.00941	<0.001	0.0941	<0.01	-	-	-
Vanadium	0.00178	<0.001	0.0178	<0.01	-	-	-
Zinc	0.00262	<0.001	0.0262	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.733	<0.019	7.33	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	8.27
Conductivity (µS/cm)	2,050.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868773
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-I19
Depth (m)	1.30 - 1.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	8.27
Conductivity (µS/cm)	2,050.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868779
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-I19
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0209	<0.003	0.209	<0.03	-	-	-
Nickel	0.000611	<0.0004	0.00611	<0.004	-	-	-
Selenium	0.0237	<0.001	0.237	<0.01	-	-	-
Vanadium	0.00414	<0.001	0.0414	<0.01	-	-	-
Zinc	0.00129	<0.001	0.0129	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000518	<0.000005	0.0000518	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	8.56
Conductivity (µS/cm)	1,980.00
Temperature (°C)	21.50
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868779
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-I19
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	8.56
Conductivity (µS/cm)	1,980.00
Temperature (°C)	21.50
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868791
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-FG18
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00599	<0.0005	0.0599	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00186	<0.0003	0.0186	<0.003	-	-	-
Lead	0.000341	<0.0002	0.00341	<0.002	-	-	-
Manganese	0.00767	<0.003	0.0767	<0.03	-	-	-
Nickel	0.00115	<0.0004	0.0115	<0.004	-	-	-
Selenium	0.00357	<0.001	0.0357	<0.01	-	-	-
Vanadium	0.00741	<0.001	0.0741	<0.01	-	-	-
Zinc	0.00408	<0.001	0.0408	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.115	<0.019	1.15	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000128	<0.00001	0.000128	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000096	<0.000005	0.000096	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000782	<0.000005	0.0000782	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	7.42
Conductivity (µS/cm)	114.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	180704-43
Lab Sample Number(s)	17868791
Sampled Date	03-Jul-2018
Customer Sample Ref.	40A-FG18
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	05-Jul-2018
pH (pH Units)	7.42
Conductivity (µS/cm)	114.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180704-43	**Client Reference:**		**Report Number:**	464004
Location:	Llanwern	**Order Number:**	LLA455	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	17868704	17868708	17868690	17868791	17868697	17868716	17868735	17868740	17868745	17868755
Customer Sample Ref.	40A-F19	40A-F19	40A-FG18	40A-FG18	40A-FG18-V	40A-F19-V	40A-G19	40A-G19	40A-G19	40A-G19-V
AGS Ref.										
Depth	1.00 - 1.00	2.00 - 2.00	2.00 - 2.00	1.00 - 1.00	2.90 - 2.90	4.60 - 4.60	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	3.50 - 3.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	09-Jul-2018			06-Jul-2018				09-Jul-2018		
Ammoniacal Nitrogen	11-Jul-2018	11-Jul-2018	11-Jul-2018	11-Jul-2018			10-Jul-2018	10-Jul-2018	10-Jul-2018	
Ammonium Soil by Titration	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018
Anions by Kone (soil)	06-Jul-2018			06-Jul-2018				06-Jul-2018		
Asbestos ID in Solid Samples	10-Jul-2018			10-Jul-2018				10-Jul-2018		
CEN 10:1 Leachate (1 Stage)	05-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018			06-Jul-2018	06-Jul-2018	06-Jul-2018	
CEN Readings	07-Jul-2018	07-Jul-2018	07-Jul-2018	07-Jul-2018			07-Jul-2018	07-Jul-2018	07-Jul-2018	
Cyanide Comp/Free/Total/Thiocyanate	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	11-Jul-2018	11-Jul-2018	11-Jul-2018	09-Jul-2018
Dissolved Metals by ICP-MS	12-Jul-2018	12-Jul-2018	12-Jul-2018	12-Jul-2018			12-Jul-2018	12-Jul-2018	12-Jul-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018			10-Jul-2018	10-Jul-2018	10-Jul-2018	
EPH CWG (Aliphatic) GC (S)	06-Jul-2018	06-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	09-Jul-2018	09-Jul-2018
EPH CWG (Aromatic) Aqueous GC (W)	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018			10-Jul-2018	10-Jul-2018	10-Jul-2018	
EPH CWG (Aromatic) GC (S)	06-Jul-2018	06-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	09-Jul-2018	09-Jul-2018
GRO by GC-FID (S)	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	09-Jul-2018	06-Jul-2018
GRO by GC-FID (W)	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018			10-Jul-2018	10-Jul-2018	10-Jul-2018	
Mercury Dissolved	09-Jul-2018	11-Jul-2018	11-Jul-2018	09-Jul-2018			11-Jul-2018	10-Jul-2018	10-Jul-2018	
Metals in solid samples by OES	05-Jul-2018	10-Jul-2018	09-Jul-2018	05-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	09-Jul-2018	10-Jul-2018	10-Jul-2018
PAH by GCMS	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018
PAH Spec MS - Aqueous (W)	11-Jul-2018	10-Jul-2018	11-Jul-2018	10-Jul-2018			10-Jul-2018	10-Jul-2018	10-Jul-2018	
pH	06-Jul-2018	05-Jul-2018	06-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018	05-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018
pH Value	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018			09-Jul-2018	09-Jul-2018	09-Jul-2018	
Phenols by HPLC (S)	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	09-Jul-2018	11-Jul-2018	11-Jul-2018	11-Jul-2018	11-Jul-2018	10-Jul-2018
Sample description	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018
Total Organic Carbon	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018
Total Sulphate	06-Jul-2018			06-Jul-2018				09-Jul-2018		
Total Sulphur	05-Jul-2018			05-Jul-2018				09-Jul-2018		
TPH CWG (W)	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018			10-Jul-2018	10-Jul-2018	10-Jul-2018	
TPH CWG GC (S)	06-Jul-2018	06-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	09-Jul-2018	09-Jul-2018
VOC MS (S)	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018

Lab Sample No(s)	17868725	17868683	17868750	17868759	17868731	17868763	17868768	17868773	17868779	17868784
Customer Sample Ref.	40A-H16	40A-H19	40A-H19	40A-H19	40A-H16-V	40A-H19-V	40A-I19	40A-I19	40A-I19	40A-I19-V
AGS Ref.										
Depth	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60	1.00 - 1.00	3.80 - 3.80	0.50 - 0.50	1.30 - 1.30	2.00 - 2.00	4.30 - 4.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	09-Jul-2018	09-Jul-2018		09-Jul-2018				09-Jul-2018		
Ammoniacal Nitrogen	10-Jul-2018	10-Jul-2018	11-Jul-2018	10-Jul-2018			10-Jul-2018	10-Jul-2018	10-Jul-2018	
Ammonium Soil by Titration	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018
Anions by Kone (soil)	06-Jul-2018	06-Jul-2018		06-Jul-2018				06-Jul-2018		
Asbestos ID in Solid Samples	10-Jul-2018	10-Jul-2018		10-Jul-2018				10-Jul-2018		
CEN 10:1 Leachate (1 Stage)	06-Jul-2018	06-Jul-2018	05-Jul-2018	06-Jul-2018			06-Jul-2018	06-Jul-2018	06-Jul-2018	
CEN Readings	09-Jul-2018	07-Jul-2018	07-Jul-2018	09-Jul-2018			07-Jul-2018	07-Jul-2018	07-Jul-2018	
Cyanide Comp/Free/Total/Thiocyanate	11-Jul-2018	11-Jul-2018	10-Jul-2018	11-Jul-2018	10-Jul-2018	10-Jul-2018	11-Jul-2018	11-Jul-2018	11-Jul-2018	10-Jul-2018
Dissolved Metals by ICP-MS	12-Jul-2018	12-Jul-2018	12-Jul-2018	12-Jul-2018			12-Jul-2018	12-Jul-2018	12-Jul-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018			10-Jul-2018	10-Jul-2018	10-Jul-2018	
EPH CWG (Aliphatic) GC (S)	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	06-Jul-2018
EPH CWG (Aromatic) Aqueous GC (W)	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018			10-Jul-2018	10-Jul-2018	10-Jul-2018	
EPH CWG (Aromatic) GC (S)	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	06-Jul-2018
GRO by GC-FID (S)	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	09-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018
GRO by GC-FID (W)	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018			10-Jul-2018	10-Jul-2018	10-Jul-2018	
Mercury Dissolved	11-Jul-2018	10-Jul-2018	11-Jul-2018	11-Jul-2018			10-Jul-2018	10-Jul-2018	11-Jul-2018	
Metals in solid samples by OES	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018
PAH by GCMS	05-Jul-2018	10-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018
PAH Spec MS - Aqueous (W)	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018			10-Jul-2018	10-Jul-2018	10-Jul-2018	
pH	06-Jul-2018	06-Jul-2018	05-Jul-2018	06-Jul-2018	05-Jul-2018	05-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	05-Jul-2018
pH Value	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018			09-Jul-2018	09-Jul-2018	09-Jul-2018	
Phenols by HPLC (S)	11-Jul-2018	10-Jul-2018	11-Jul-2018	11-Jul-2018	10-Jul-2018	09-Jul-2018	11-Jul-2018	09-Jul-2018	11-Jul-2018	09-Jul-2018
Sample description	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018	04-Jul-2018
Total Organic Carbon	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018
Total Sulphate	09-Jul-2018	09-Jul-2018		09-Jul-2018				09-Jul-2018		
Total Sulphur	09-Jul-2018	09-Jul-2018		09-Jul-2018				09-Jul-2018		
TPH CWG (W)	10-Jul-2018	10-Jul-2018	10-Jul-2018	10-Jul-2018			10-Jul-2018	10-Jul-2018	10-Jul-2018	
TPH CWG GC (S)	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	09-Jul-2018	06-Jul-2018
VOC MS (S)	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018	06-Jul-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
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Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	08 August 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180731-56
Your Reference:	
Location:	Llanwern
Report No:	467730

This report has been revised and directly supersedes 467729 in its entirety.

We received 38 samples on Tuesday July 31, 2018 and 38 of these samples were scheduled for analysis which was completed on Wednesday August 08, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18034143	3CA8		0.50 - 0.50	30/07/2018
18034148	3CA8		1.00 - 1.00	30/07/2018
18034152	3CA8-V		1.80 - 1.80	30/07/2018
18034156	3CB7		0.50 - 0.50	30/07/2018
18034160	3CB7		0.90 - 0.90	30/07/2018
18034133	3CB8		0.30 - 0.30	30/07/2018
18034169	3CB7-V		1.00 - 1.00	30/07/2018
18034139	3CB8-V		0.40 - 0.40	30/07/2018
18034173	3CC7		0.50 - 0.50	30/07/2018
18034179	3CC7		0.90 - 0.90	30/07/2018
18034114	3CC8		0.50 - 0.50	30/07/2018
18034118	3CC8		1.00 - 1.00	30/07/2018
18034189	3CC7-V		1.00 - 1.00	30/07/2018
18034123	3CC8-V		1.10 - 1.10	30/07/2018
18034200	3CD7		0.50 - 0.50	30/07/2018
18034096	3CD8		0.50 - 0.50	30/07/2018
18034100	3CD8		1.00 - 1.00	30/07/2018
18034209	3CD7-V		0.70 - 0.70	30/07/2018
18034104	3CD8-V		1.20 - 1.20	30/07/2018
18034218	3CE7		0.50 - 0.50	30/07/2018
18034228	3CE7		0.90 - 0.90	30/07/2018
18034081	3CE8		0.50 - 0.50	30/07/2018
18034086	3CE8		1.00 - 1.00	30/07/2018
18034240	3CE7-V		1.00 - 1.00	30/07/2018
18034092	3CE8-V		1.50 - 1.50	30/07/2018
18034063	3CF9		0.50 - 0.50	30/07/2018
18034067	3CF9		1.00 - 1.00	30/07/2018
18034071	3CF9		1.60 - 1.60	30/07/2018
18034075	3CF9-V		1.70 - 1.70	30/07/2018
18034268	3CG9		0.50 - 0.50	30/07/2018
18034274	3CG9		1.00 - 1.00	30/07/2018
18034279	3CG9-V		1.20 - 1.20	30/07/2018
18034247	3CH9		0.50 - 0.50	30/07/2018
18034255	3CH9		1.00 - 1.00	30/07/2018
18034261	3CH9-V		1.30 - 1.30	30/07/2018
18034057	3CI9		0.50 - 0.50	30/07/2018
18034108	3CI9		1.00 - 1.00	30/07/2018
18034165	3CI9-V		1.30 - 1.30	30/07/2018

Maximum Sample/Coolbox Temperature (°C) :

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

9.2

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																	
			18034143			18034148			18034152		18034156			18034160			18034133			18034169	
			Customer Sample Reference																	
			3CA8			3CA8			3CA8-V		3CB7			3CB7			3CB8			3CB7-V	
			AGS Reference																	
			Depth (m)																	
			0.50 - 0.50			1.00 - 1.00			1.80 - 1.80		0.50 - 0.50			0.90 - 0.90			0.30 - 0.30			1.00 - 1.00	
			Container																	
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type																	
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 14					X								X			X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 25	X			X					X			X			X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 38		X			X		X			X			X			X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 14					X								X			X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 14				X								X			X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 6				X								X							
CEN Readings	All	NDPs: 0 Tests: 25	X			X					X			X			X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 63	X	X		X	X		X		X	X		X	X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 25	X			X					X			X			X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 25	X			X					X			X			X				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 38		X			X		X			X			X			X		X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 25	X			X					X			X			X				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 38		X			X		X			X			X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 38			X			X		X			X			X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 25	X			X					X			X			X				

18034200	3CD7		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X				
				1kg TUB	S		X			X		X	X	X	X		X					X
18034123	3CC8-V		1.10 - 1.10	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X			X		X				
18034189	3CC7-V		1.00 - 1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X			X		X				
18034118	3CC8		1.00 - 1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X				
				1kg TUB	S		X			X		X	X	X	X		X					X
18034114	3CC8		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X			X		X				
				1kg TUB	S		X					X	X	X	X		X					X
18034179	3CC7		0.90 - 0.90	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X				
				1kg TUB	S		X			X		X	X	X	X		X					X
18034173	3CC7		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X			X		X				
				1kg TUB	S		X					X	X	X	X		X					X
18034139	3CB8-V		0.40 - 0.40	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X			X		X				

Validated

CERTIFICATE OF ANALYSIS

SDG: 180731-56 **Client Reference:** **Report Number:** 467730
Location: Llanwern **Order Number:** LLA465 **Superseded Report:** 467729

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																	
			18034143			18034148			18034152		18034156			18034160			18034133			18034169	
			Customer Sample Reference																	
			3CA8			3CA8			3CA8-V		3CB7			3CB7			3CB8			3CB7-V	
			AGS Reference																	
			Depth (m)																	
			0.50 - 0.50			1.00 - 1.00			1.80 - 1.80		0.50 - 0.50			0.90 - 0.90			0.30 - 0.30			1.00 - 1.00	
			Container																	
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type																	
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 25	X			X					X			X			X				
Metals in solid samples by OES	All	NDPs: 0 Tests: 38		X			X		X			X			X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 38		X			X		X			X			X			X		X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 25	X			X					X			X			X				
pH	All	NDPs: 0 Tests: 38		X			X		X			X			X			X		X	
pH Value	All	NDPs: 0 Tests: 25	X			X					X			X			X				
Phenols by HPLC (S)	All	NDPs: 0 Tests: 38		X			X		X			X			X			X		X	
Sample description	All	NDPs: 0 Tests: 38		X			X		X			X			X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 38		X			X		X			X			X			X		X	
Total Sulphate	All	NDPs: 0 Tests: 14					X								X			X			
Total Sulphur	All	NDPs: 0 Tests: 14					X								X			X			
TPH CWG (W)	All	NDPs: 0 Tests: 25	X			X					X			X			X				
TPH CWG GC (S)	All	NDPs: 0 Tests: 38		X			X		X			X			X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 38			X			X		X			X			X			X			X

18034200	3CD7		0.50 - 0.50	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S		X
				1kg TUB	S	X	
18034123	3CC8-V		1.10 - 1.10	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S		X
				60g VOC (ALE215)	S	X	
18034189	3CC7-V		1.00 - 1.00	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S		X
				1kg TUB	S	X	
18034118	3CC8		1.00 - 1.00	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S		X
				1kg TUB	S	X	
18034114	3CC8		0.50 - 0.50	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S		X
				1kg TUB	S	X	
18034179	3CC7		0.90 - 0.90	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S		X
				1kg TUB	S	X	
18034173	3CC7		0.50 - 0.50	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S		X
				1kg TUB	S	X	
18034139	3CB8-V		0.40 - 0.40	60g VOC (ALE215)	S	X	
				250g Amber Jar (ALE210)	S		X

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)				18034096			18034100			18034209		18034104			18034218			18034228			18034081
Customer Sample Reference				3CD8			3CD8			3CD7-V		3CD8-V			3CE7			3CE7			3CE8
AGS Reference																					
Depth (m)				0.50 - 0.50			1.00 - 1.00			0.70 - 0.70		1.20 - 1.20			0.50 - 0.50			0.90 - 0.90			0.50 - 0.50
Container				1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type				S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 14						X										X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 25		X			X							X			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 38			X			X		X		X			X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 14						X										X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 14					X										X					
Asbestos Quantification - Full	All	NDPs: 0 Tests: 6																				
CEN Readings	All	NDPs: 0 Tests: 25		X			X							X			X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 63		X	X		X	X		X		X		X	X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 25		X			X							X			X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 25		X			X							X			X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 38			X			X		X		X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 25		X			X							X			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 38			X			X		X		X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 38				X			X		X		X			X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 25		X			X							X			X			X		

18034268	3CG9		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X				
				1kg TUB	S		X			X	X	X	X	X	X		X					X
18034075	3CF9-V		1.70 - 1.70	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X					X			X		X				
18034071	3CF9		1.60 - 1.60	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X				
				1kg TUB	S		X			X		X	X	X	X		X					X
18034067	3CF9		1.00 - 1.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X					X			X		X				
				1kg TUB	S		X					X	X	X	X		X					X
18034063	3CF9		0.50 - 0.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X				
				1kg TUB	S		X			X	X	X	X	X	X		X					X
18034092	3CE8-V		1.50 - 1.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X					X			X		X				
18034240	3CE7-V		1.00 - 1.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S			X					X			X		X				
18034086	3CE8		1.00 - 1.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S	X		X	X				X			X		X				
				1kg TUB	S		X			X	X	X	X	X	X		X					X

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
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Lab Sample No(s)			18034096			18034100			18034209		18034104			18034218			18034228			18034081	
Customer Sample Reference			3CD8			3CD8			3CD7-V		3CD8-V			3CE7			3CE7			3CE8	
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00			0.70 - 0.70		1.20 - 1.20			0.50 - 0.50			0.90 - 0.90			0.50 - 0.50	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 25	X			X							X			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 38		X			X		X		X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 38		X			X		X		X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 25	X			X							X			X			X		
pH	All	NDPs: 0 Tests: 38		X			X		X		X			X			X			X	
pH Value	All	NDPs: 0 Tests: 25	X			X							X			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 38		X			X		X		X			X			X			X	
Sample description	All	NDPs: 0 Tests: 38		X			X		X		X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 38		X			X		X		X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 14					X										X				
Total Sulphur	All	NDPs: 0 Tests: 14					X										X				
TPH CWG (W)	All	NDPs: 0 Tests: 25	X			X							X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 38		X			X		X		X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 38			X			X		X		X			X			X			X

| 18034268 | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Results Legend

X Test

N No Determination Possible

Sample Types -

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UNS - Unspecified Solid
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PL - Prepared Leachate
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US - Untreated Sewage
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UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18034274			18034279			18034247			18034255			18034261		18034057			18034108		
Customer Sample Reference			3CG9			3CG9-V			3CH9			3CH9			3CH9-V		3CI9			3CI9		
AGS Reference																						
Depth (m)			1.00 - 1.00			1.20 - 1.20			0.50 - 0.50			1.00 - 1.00			1.30 - 1.30		0.50 - 0.50			1.00 - 1.00		
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 14							X									X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 25	X					X			X						X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 38		X		X			X			X			X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 14							X									X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 14						X									X					
Asbestos Quantification - Full	All	NDPs: 0 Tests: 6															X					
CEN Readings	All	NDPs: 0 Tests: 25	X					X			X						X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 63	X	X		X		X	X		X	X		X		X	X		X	X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 25	X					X			X						X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 25	X					X			X						X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 38		X		X			X			X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 25	X					X			X						X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 38		X		X			X			X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 38			X		X			X			X			X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 25	X					X			X						X			X		

18034165	3CI9-V		1.30 - 1.30	60g VOC (ALE215)	250g Amber Jar (ALE210)
				S	S
					X
					X
					X
					X
				X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
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Lab Sample No(s)			18034274			18034279			18034247			18034255			18034261			18034057			18034108	
Customer Sample Reference			3CG9			3CG9-V			3CH9			3CH9			3CH9-V			3CI9			3CI9	
AGS Reference																						
Depth (m)			1.00 - 1.00			1.20 - 1.20			0.50 - 0.50			1.00 - 1.00			1.30 - 1.30			0.50 - 0.50			1.00 - 1.00	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 25	X					X			X					X			X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 38		X		X			X			X		X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 38		X		X			X			X		X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 25	X					X			X					X			X			
pH	All	NDPs: 0 Tests: 38		X		X			X			X		X			X			X		
pH Value	All	NDPs: 0 Tests: 25	X					X			X					X			X			
Phenols by HPLC (S)	All	NDPs: 0 Tests: 38		X		X			X			X		X			X			X		
Sample description	All	NDPs: 0 Tests: 38		X		X			X			X		X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 38		X		X			X			X		X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 14							X								X					
Total Sulphur	All	NDPs: 0 Tests: 14							X								X					
TPH CWG (W)	All	NDPs: 0 Tests: 25	X					X			X					X			X			
TPH CWG GC (S)	All	NDPs: 0 Tests: 38		X		X			X			X		X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 38			X		X			X			X		X			X			X	

18034165	3CI9-V		1.30 - 1.30	60g VOC (ALE215)	250g Amber Jar (ALE210)
				S	S
					X
					X
					X
					X
					X
					X
					X
				X	

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18034143	3CA8	0.50 - 0.50	Grey	Loamy Sand	Stones	None
18034148	3CA8	1.00 - 1.00	Grey	Loamy Sand	Stones	Vegetation
18034152	3CA8-V	1.80 - 1.80	Grey	Silt Loam	Stones	Vegetation
18034156	3CB7	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
18034160	3CB7	0.90 - 0.90	Dark Brown	Sandy Loam	Stones	Vegetation
18034133	3CB8	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
18034169	3CB7-V	1.00 - 1.00	Grey	Clay	Stones	None
18034139	3CB8-V	0.40 - 0.40	Grey	Silt Loam	Stones	Vegetation
18034173	3CC7	0.50 - 0.50	Dark Brown	Sandy Loam	Concrete/Aggregate	Stones
18034179	3CC7	0.90 - 0.90	Dark Brown	Sandy Silt Loam	Stones	Vegetation
18034114	3CC8	0.50 - 0.50	Grey	Sandy Silt Loam	Stones	Vegetation
18034118	3CC8	1.00 - 1.00	Dark Brown	Sandy Silt Loam	Stones	Brick
18034189	3CC7-V	1.00 - 1.00	Dark Brown	Clay Loam	None	None
18034123	3CC8-V	1.10 - 1.10	Grey	Silt Loam	Vegetation	None
18034200	3CD7	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
18034096	3CD8	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
18034100	3CD8	1.00 - 1.00	Dark Brown	Sandy Silt Loam	Stones	Vegetation
18034209	3CD7-V	0.70 - 0.70	Black	Silty Clay Loam	Stones	Vegetation
18034104	3CD8-V	1.20 - 1.20	Grey	Silt Loam	Stones	Vegetation
18034218	3CE7	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18034228	3CE7	0.90 - 0.90	Dark Brown	Silt Loam	Stones	Vegetation
18034081	3CE8	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	None
18034086	3CE8	1.00 - 1.00	Dark Brown	Sandy Silt Loam	Stones	None
18034240	3CE7-V	1.00 - 1.00	Grey	Silty Clay	Plastic	None
18034092	3CE8-V	1.50 - 1.50	Dark Brown	Silty Clay	Vegetation	None
18034063	3CF9	0.50 - 0.50	Dark Brown	Silt Loam	Stones	Vegetation
18034067	3CF9	1.00 - 1.00	Dark Brown	Loamy Sand	Vegetation	Crushed Brick
18034071	3CF9	1.60 - 1.60	Dark Brown	Silty Clay Loam	Stones	Vegetation
18034075	3CF9-V	1.70 - 1.70	Dark Brown	Silty Clay Loam	Vegetation	None
18034268	3CG9	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	Brick
18034274	3CG9	1.00 - 1.00	Light Brown	Sandy Silt Loam	Stones	Brick
18034279	3CG9-V	1.20 - 1.20	Dark Brown	Sandy Silt Loam	Vegetation	None
18034247	3CH9	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Brick
18034255	3CH9	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Brick
18034261	3CH9-V	1.30 - 1.30	Green	Silty Clay	None	None
18034057	3CI9	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Brick
18034108	3CI9	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18034165	3CI9-V	1.30 - 1.30	Dark Brown	Silt Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA8	3CA8	3CA8-V	3CB7	3CB7	3CB8
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.90 - 0.90	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034143	18034148	18034152	18034156	18034160	18034133
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		4.2	6.3	26	3.2	2.6	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	15.1 M	199 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0104 M	0.0107 M	<0.01 M	0.114 M	0.236 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0103 M	0.0411 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	0.124 M	0.277 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.339			0.253	0.15
Sulphate, Total potential	<0.06 %	TM132			1.02			0.759	0.45
Soil Organic Matter (SOM)	<0.35 %	TM132		1.46 #	4.83 #	1.91 #	5.67 #	5.88 #	4.9 #
pH	1 pH Units	TM133		12.6 M	12.5 M	7.73 M	11.9 M	12.1 M	10.3 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		5.12 M	12.6 M	10.6 M	7.27 M	6.56 M	9.72 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.2 M	<0.02 M	<0.02 M	<0.02 M	0.435 M
Chromium	<0.9 mg/kg	TM181		300 M	303 M	36.8 M	120 M	271 M	33.8 M
Copper	<1.4 mg/kg	TM181		14.4 M	45.1 M	16 M	13.6 M	15.5 M	16.4 M
Iron	<1000 mg/kg	TM181		132000 #	255000 #	32600 #	85900 #	112000 #	53000 #
Lead	<0.7 mg/kg	TM181		11.9 M	17.9 M	25.9 M	40.2 M	28 M	59.4 M
Manganese	<0.13 mg/kg	TM181		33900 M	21400 M	332 M	11800 M	26800 M	3940 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		5.29 M	35.3 M	28.5 M	11.6 M	12.3 M	16.9 M
Selenium	<1 mg/kg	TM181		9.33 #	<10 #	<1 #	3.45 #	8.14 #	1.34 #
Vanadium	<0.2 mg/kg	TM181		244 #	338 #	53.5 #	188 #	940 #	66.4 #
Zinc	<1.9 mg/kg	TM181		56.6 M	108 M	104 M	191 M	109 M	258 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.479			0.478	0.397
Calcium	<21 mg/kg	TM224			171000			175000	111000
Magnesium	<8 mg/kg	TM224			9800			14400	24500
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0166 M			0.0904 M	0.105 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			0.0164 #			<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #			<0.001 #	
Additional Asbestos Components (Using TM048)		TM304			None #			No #	
Analysts Comments		TM304			N/A			0	
Asbestos Quantification - Total - %	<0.001 %	TM304			0.0164 #			<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CB7-V	3CB8-V	3CC7	3CC7	3CC8	3CC8
			Depth (m)	1.00 - 1.00	0.40 - 0.40	0.50 - 0.50	0.90 - 0.90	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034169	18034139	18034173	18034179	18034114	18034118
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		18	23	5.6	12	14	17
Exchangeable Ammonia as N	<12 mg/kg	TM024		158 M	<12 M	<12 M	16.1 M	16.2 M	43.5 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0246 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0123 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.012 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132					0.164		0.227
Sulphate, Total potential	<0.06 %	TM132					0.492		0.681
Soil Organic Matter (SOM)	<0.35 %	TM132		4.59 #	4.74 #	5.65 #	4.29 #	25.3 #	11.2 #
pH	1 pH Units	TM133		9.87 M	8.07 M	10.9 M	11.1 M	8.67 M	9.74 M
Cyanide, Total	<1 mg/kg	TM153		3.28 M	449 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	-0.096 M
Arsenic	<0.6 mg/kg	TM181		10.7 M	12.4 M	12.5 M	12.8 M	9.05 M	8.82 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.167 M	<0.02 M	<0.02 M	<0.02 M	0.167 M
Chromium	<0.9 mg/kg	TM181		35.4 M	28.8 M	6.3 M	78.3 M	182 M	35.9 M
Copper	<1.4 mg/kg	TM181		27.8 M	24.5 M	18.4 M	20.6 M	22.6 M	17.6 M
Iron	<1000 mg/kg	TM181		73900 #	32700 #	102000 #	99600 #	114000 #	78400 #
Lead	<0.7 mg/kg	TM181		39 M	37 M	58.2 M	56.4 M	69.2 M	108 M
Manganese	<0.13 mg/kg	TM181		3080 M	919 M	5270 M	7510 M	10600 M	4510 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		29.5 M	31.7 M	17.6 M	24.6 M	21.1 M	19.8 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	1.03 #	1.82 #	1.04 #
Vanadium	<0.2 mg/kg	TM181		63.3 #	45.8 #	71.7 #	132 #	247 #	101 #
Zinc	<1.9 mg/kg	TM181		190 M	140 M	201 M	235 M	279 M	358 M
Sulphate, acid soluble (total)	<0.02 %	TM221					0.508		0.228
Calcium	<21 mg/kg	TM224					137000		93200
Magnesium	<8 mg/kg	TM224					19900		26200
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243					0.238 M		0.337 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CC7-V	3CC8-V	3CD7	3CD8	3CD8	3CD7-V
			Depth (m)	1.00 - 1.00	1.10 - 1.10	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034189	18034123	18034200	18034096	18034100	18034209
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		19	20	4.4	14	13	29
Exchangeable Ammonia as N	<12 mg/kg	TM024		86.3 M	132 M	13.2 M	29.3 M	<12 M	141 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0523 M	0.129 M	0.0805 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0234 M	0.0115 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	0.0523 M	0.152 M	0.092 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.214		0.298	
Sulphate, Total potential	<0.06 %	TM132				0.642		0.894	
Soil Organic Matter (SOM)	<0.35 %	TM132		0.89 #	1.55 #	2.83 #	14.6 #	7.78 #	7.14 #
pH	1 pH Units	TM133		8.07 M	7.77 M	11.4 M	11.1 M	11 M	7.72 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.39 M	11.3 M	12.2 M	10.8 M	10.6 M	13 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.2 M	0.91 M	3.14 M	0.387 M
Chromium	<0.9 mg/kg	TM181		25.3 M	37.3 M	96.7 M	77.5 M	250 M	32.3 M
Copper	<1.4 mg/kg	TM181		8.16 M	17.1 M	23.3 M	22.2 M	29.4 M	18.8 M
Iron	<1000 mg/kg	TM181		36000 #	35200 #	207000 #	114000 #	162000 #	28800 #
Lead	<0.7 mg/kg	TM181		16.6 M	25.3 M	77 M	304 M	537 M	44.2 M
Manganese	<0.13 mg/kg	TM181		881 M	607 M	11100 M	12300 M	18600 M	392 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		28.6 M	37.4 M	26.9 M	19.9 M	27.1 M	25 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<10 #	2.72 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		41.1 #	54.2 #	375 #	314 #	573 #	52.4 #
Zinc	<1.9 mg/kg	TM181		79.8 M	105 M	237 M	1050 M	1400 M	128 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.36		0.376	
Calcium	<21 mg/kg	TM224				101000		184000	
Magnesium	<8 mg/kg	TM224				16400		11900	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.238 M		0.236 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CD8-V	3CE7	3CE7	3CE8	3CE8	3CE7-V
			Depth (m)	1.20 - 1.20	0.50 - 0.50	0.90 - 0.90	0.50 - 0.50	1.00 - 1.00	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034104	18034218	18034228	18034081	18034086	18034240
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		21	10	12	15	13	21
Exchangeable Ammonia as N	<12 mg/kg	TM024		157 M	<12 M	<12 M	<12 M	<12 M	118 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0565 M	0.106 M	0.046 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0113 M	0.0118 M	0.0115 M	0.0126 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	0.0678 M	0.118 M	0.0575 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.29		0.216	
Sulphate, Total potential	<0.06 %	TM132				0.87		0.648	
Soil Organic Matter (SOM)	<0.35 %	TM132		0.729 #	5.79 #	5.43 #	7.07 #	7.53 #	0.903 #
pH	1 pH Units	TM133		7.72 M	10.8 M	11.1 M	10.8 M	10.3 M	7.75 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.62 M	8.77 M	12.1 M	11.7 M	10.8 M	9.01 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	0.295 M	2.84 M	0.822 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		39.4 M	102 M	64.8 M	41.6 M	84.4 M	34.7 M
Copper	<1.4 mg/kg	TM181		18.8 M	15.7 M	27.3 M	23.8 M	26.6 M	12.5 M
Iron	<1000 mg/kg	TM181		42900 #	71300 #	225000 #	174000 #	154000 #	38100 #
Lead	<0.7 mg/kg	TM181		20.6 M	82.6 M	182 M	189 M	204 M	27 M
Manganese	<0.13 mg/kg	TM181		548 M	8060 M	7300 M	7300 M	8630 M	280 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		42.1 M	15 M	31.6 M	25.2 M	32.4 M	37.6 M
Selenium	<1 mg/kg	TM181		<1 #	2.35 #	<10 #	<10 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		52.6 #	164 #	266 #	217 #	257 #	51.1 #
Zinc	<1.9 mg/kg	TM181		120 M	330 M	496 M	510 M	568 M	113 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.441		0.357	
Calcium	<21 mg/kg	TM224				97000		101000	
Magnesium	<8 mg/kg	TM224				11700		11400	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.31 M		0.191 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						No #	
Analysts Comments		TM304						0	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CE8-V	3CF9	3CF9	3CF9	3CF9-V	3CG9
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60	1.70 - 1.70	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034092	18034063	18034067	18034071	18034075	18034268
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		23	12	11	9.5	32	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		206 M	<12 M	<12 M	18.5 M	187 M	14.3 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0113 M	0.0224 M	0.011 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0294 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	1.16 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	1.19 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.0939		0.16		0.247
Sulphate, Total potential	<0.06 %	TM132			0.282		0.48		0.741
Soil Organic Matter (SOM)	<0.35 %	TM132		0.91 #	4.02 #	3.59 #	4.52 #	7.03 #	5.55 #
pH	1 pH Units	TM133		7.8 M	9.13 M	10.1 M	10.7 M	7.39 M	10.9 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13.1 M	9.81 M	12 M	11.8 M	11.9 M	10.8 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.171 M	0.288 M	0.0459 M	0.157 M	0.408 M
Chromium	<0.9 mg/kg	TM181		38.9 M	24.7 M	35.3 M	39 M	38.2 M	68.9 M
Copper	<1.4 mg/kg	TM181		13.6 M	23 M	28.2 M	24.2 M	18.4 M	19.1 M
Iron	<1000 mg/kg	TM181		44200 #	40100 #	67700 #	76700 #	35200 #	68900 #
Lead	<0.7 mg/kg	TM181		23 M	48.8 M	96.2 M	89.5 M	39.4 M	88.1 M
Manganese	<0.13 mg/kg	TM181		434 M	2340 M	25900 M	6450 M	392 M	5520 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		38 M	22.6 M	24.2 M	26.7 M	25.4 M	18.3 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	10.4 #	1.35 #	<1 #	1.63 #
Vanadium	<0.2 mg/kg	TM181		54.2 #	40.9 #	49.8 #	72.9 #	60.2 #	96 #
Zinc	<1.9 mg/kg	TM181		110 M	164 M	335 M	308 M	134 M	309 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.14		0.253		0.394
Calcium	<21 mg/kg	TM224			107000		104000		102000
Magnesium	<8 mg/kg	TM224			32300		11400		16500
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.14 M		0.167 M		0.143 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				<0.001 #
Additional Asbestos Components (Using TM048)		TM304			None #				None #
Analysts Comments		TM304			N/A				N/A
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CG9	3CG9-V	3CH9	3CH9	3CH9-V	3CI9
			Depth (m)	1.00 - 1.00	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034274	18034279	18034247	18034255	18034261	18034057
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	36	13	13	25	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	110 M	<12 M	<12 M	190 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.209			0.265
Sulphate, Total potential	<0.06 %	TM132				0.627			0.795
Soil Organic Matter (SOM)	<0.35 %	TM132		1.06 #	6.96 #	3.19 #	3.9 #	1.91 #	7.57 #
pH	1 pH Units	TM133		8.49 M	7.54 M	11.2 M	11.2 M	7.76 M	10.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.62 M	14.4 M	7.5 M	8.7 M	13.2 M	7.89 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.199 M	0.854 M	0.935 M	<0.02 M	0.316 M
Chromium	<0.9 mg/kg	TM181		27.8 M	38.6 M	48.3 M	48 M	43.3 M	54.4 M
Copper	<1.4 mg/kg	TM181		24.3 M	20.3 M	17 M	61.6 M	18 M	15.9 M
Iron	<1000 mg/kg	TM181		38000 #	33900 #	55100 #	69500 #	44600 #	55200 #
Lead	<0.7 mg/kg	TM181		32.5 M	37.9 M	129 M	169 M	26.6 M	169 M
Manganese	<0.13 mg/kg	TM181		1260 M	574 M	6250 M	5840 M	850 M	5730 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		28.7 M	30.7 M	14 M	46 M	35.9 M	14.9 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	2.38 #	1.92 #	<1 #	1.82 #
Vanadium	<0.2 mg/kg	TM181		36.4 #	61.3 #	72.2 #	76.6 #	61.2 #	111 #
Zinc	<1.9 mg/kg	TM181		131 M	142 M	482 M	686 M	128 M	319 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.475			0.363
Calcium	<21 mg/kg	TM224				146000			100000
Magnesium	<8 mg/kg	TM224				24200			12400
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.217 M			0.173 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							No #
Analysts Comments		TM304							0
Asbestos Quantification - Total - %	<0.001 %	TM304							<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CI9	3CI9-V				
			Depth (m)	1.00 - 1.00	1.30 - 1.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	30/07/2018	30/07/2018				
			Sample Time	00:00	00:00				
			Date Received	31/07/2018	31/07/2018				
			SDG Ref	180731-56	180731-56				
			Lab Sample No.(s)	18034108	18034165				
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	27				
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	265 M				
Phenol	<0.01 mg/kg	TM062 (S)		0.0116 M	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M				
Soil Organic Matter (SOM)	<0.35 %	TM132		4.53 #	2.43 #				
pH	1 pH Units	TM133		11 M	7.29 M				
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M				
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M				
Arsenic	<0.6 mg/kg	TM181		9.63 M	12 M				
Cadmium	<0.02 mg/kg	TM181		0.172 M	<0.02 M				
Chromium	<0.9 mg/kg	TM181		104 M	33.8 M				
Copper	<1.4 mg/kg	TM181		24.5 M	19 M				
Iron	<1000 mg/kg	TM181		86500 #	41000 #				
Lead	<0.7 mg/kg	TM181		448 M	27.6 M				
Manganese	<0.13 mg/kg	TM181		7800 M	884 M				
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M				
Nickel	<0.2 mg/kg	TM181		18.8 M	28.9 M				
Selenium	<1 mg/kg	TM181		2.25 #	<1 #				
Vanadium	<0.2 mg/kg	TM181		116 #	53.2 #				
Zinc	<1.9 mg/kg	TM181		316 M	132 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA8	3CA8	3CA8-V	3CB7	3CB7	3CB8
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.90 - 0.90	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034143	18034148	18034152	18034156	18034160	18034133
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.5	94	90.4	93.6	88.5	93.1
Acenaphthene-d10 % recovery**	%	TM218		95.1	91	85.6	87.6	85.9	91.8
Phenanthrene-d10 % recovery**	%	TM218		96	93.4	91.1	89.9	86	91.5
Chrysene-d12 % recovery**	%	TM218		92.2	92.8	87	79	76.1	88.6
Perylene-d12 % recovery**	%	TM218		105	93.1	95.9	77.2	75.5	97.9
Naphthalene	<0.009 mg/kg	TM218		0.0662 M	0.451 M	<0.009 M	1.35 M	1.26 M	0.272 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.249 M	<0.012 M	0.463 M	0.367 M	0.0763 M
Acenaphthene	<0.008 mg/kg	TM218		0.275 M	0.114 M	<0.008 M	0.0754 M	0.087 M	0.0203 M
Fluorene	<0.01 mg/kg	TM218		0.118 M	0.165 M	<0.01 M	0.328 M	0.204 M	0.0994 M
Phenanthrene	<0.015 mg/kg	TM218		1.99 M	2.02 M	0.0276 M	2.83 M	2.87 M	0.539 M
Anthracene	<0.016 mg/kg	TM218		0.472 M	0.55 M	<0.016 M	0.829 M	0.878 M	0.168 M
Fluoranthene	<0.017 mg/kg	TM218		5.2 M	4.94 M	0.0551 M	4.47 M	5.12 M	0.828 M
Pyrene	<0.015 mg/kg	TM218		4.97 M	4.13 M	0.0493 M	3.51 M	3.96 M	0.605 M
Benz(a)anthracene	<0.014 mg/kg	TM218		4.18 M	2.7 M	0.038 M	2.3 M	2.44 M	0.378 M
Chrysene	<0.01 mg/kg	TM218		4.19 M	2.27 M	0.0377 M	2 M	2.1 M	0.366 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		8.1 M	3.69 M	0.0637 M	3.53 M	3.68 M	0.611 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.54 M	1.3 M	0.0197 M	1.26 M	1.21 M	0.161 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		5.3 M	2.76 M	0.0433 M	2.13 M	2.09 M	0.335 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		3.78 M	1.92 M	0.0343 M	1.32 M	1.33 M	0.276 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.775 M	0.43 M	<0.023 M	0.469 M	0.454 M	0.0595 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		3.07 M	1.84 M	<0.024 M	1.6 M	1.55 M	0.224 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		45	29.5	0.369	28.5	29.6	5.02

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CB7-V	3CB8-V	3CC7	3CC7	3CC8	3CC8
			Depth (m)	1.00 - 1.00	0.40 - 0.40	0.50 - 0.50	0.90 - 0.90	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034169	18034139	18034173	18034179	18034114	18034118
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.7	92	92.2	78.4	91.5	89.3
Acenaphthene-d10 % recovery**	%	TM218		82	89.6	87.1	79.1	93.1	87
Phenanthrene-d10 % recovery**	%	TM218		82.2	91.3	88.8	80.5	92.1	84.3
Chrysene-d12 % recovery**	%	TM218		75.3	87.8	76.4	75.9	87.6	75.6
Perylene-d12 % recovery**	%	TM218		72.6	98.8	71.9	71.3	108	72.9
Naphthalene	<0.009 mg/kg	TM218		0.166 M	0.0142 M	0.3 M	0.41 M	1.39 M	2.12 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0171 M	<0.012 M	0.171 M	0.255 M	1.39 M	0.999 M
Acenaphthene	<0.008 mg/kg	TM218		0.124 M	0.0138 M	0.0254 M	0.0311 M	0.0808 M	0.111 M
Fluorene	<0.01 mg/kg	TM218		0.0696 M	0.022 M	0.107 M	0.157 M	0.608 M	0.727 M
Phenanthrene	<0.015 mg/kg	TM218		0.693 M	0.212 M	0.856 M	1.2 M	4.65 M	4.27 M
Anthracene	<0.016 mg/kg	TM218		0.192 M	0.048 M	0.354 M	0.406 M	1.9 M	1.44 M
Fluoranthene	<0.017 mg/kg	TM218		1.49 M	0.29 M	2 M	2.47 M	14 M	9.94 M
Pyrene	<0.015 mg/kg	TM218		1.41 M	0.215 M	1.49 M	1.89 M	10.6 M	7.44 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.17 M	0.139 M	1.01 M	1.15 M	7.68 M	4.61 M
Chrysene	<0.01 mg/kg	TM218		1.1 M	0.142 M	0.778 M	0.921 M	6.92 M	3.64 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.14 M	0.216 M	1.38 M	1.22 M	11.8 M	7.36 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.73 M	0.0626 M	0.517 M	0.447 M	3.73 M	2.17 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.52 M	0.131 M	0.82 M	0.976 M	7.89 M	4.42 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.818 M	0.0993 M	0.488 M	0.778 M	6.83 M	2.6 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.248 M	<0.023 M	0.166 M	0.172 M	1.6 M	0.899 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.964 M	0.0788 M	0.579 M	0.713 M	5.99 M	3.32 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		12.9	1.68	11	13.2	87	56.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CC7-V	3CC8-V	3CD7	3CD8	3CD8	3CD7-V
			Depth (m)	1.00 - 1.00	1.10 - 1.10	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034189	18034123	18034200	18034096	18034100	18034209
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.3	94.9	94.4	85.2	92.2	87.5
Acenaphthene-d10 % recovery**	%	TM218		86.7	87.6	89.2	86.2	89.4	85.8
Phenanthrene-d10 % recovery**	%	TM218		84.1	89.5	93	86.2	92.5	89.2
Chrysene-d12 % recovery**	%	TM218		81.7	91.1	95.2	88	88.1	81.1
Perylene-d12 % recovery**	%	TM218		76.1	90.1	94.5	79.6	84.9	80.1
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	0.153 M	1.21 M	0.794 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	0.0495 M	1.24 M	0.418 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	0.0182 M	0.129 M	0.0608 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.0328 M	1.38 M	0.33 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	0.442 M	10.8 M	3.16 M	0.0471 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.101 M	2.73 M	0.741 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	<0.017 M	0.738 M	16.4 M	7.42 M	0.0858 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	0.593 M	11.3 M	5.48 M	0.0595 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	0.319 M	6.66 M	3.22 M	0.0253 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.324 M	5.88 M	2.4 M	0.0405 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	0.41 M	7.4 M	4.23 M	0.0681 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	0.164 M	2 M	1.18 M	0.0208 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	0.304 M	5 M	2.67 M	0.0249 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	0.229 M	3.85 M	1.84 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	0.0511 M	0.782 M	0.446 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	0.238 M	3.49 M	1.78 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	<0.118	4.17	80.3	36.2	0.372

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CD8-V	3CE7	3CE7	3CE8	3CE8	3CE7-V
			Depth (m)	1.20 - 1.20	0.50 - 0.50	0.90 - 0.90	0.50 - 0.50	1.00 - 1.00	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034104	18034218	18034228	18034081	18034086	18034240
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93	85.5	91.4	92.6	83.7	88.2
Acenaphthene-d10 % recovery**	%	TM218		85.9	91	84.1	84	80.6	92.4
Phenanthrene-d10 % recovery**	%	TM218		89.9	91	84.3	87.7	79.5	95.6
Chrysene-d12 % recovery**	%	TM218		92.5	84.4	75.2	76.3	72.5	97.6
Perylene-d12 % recovery**	%	TM218		87.7	81.7	72.4	72.7	71.4	101
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	1.1 M	0.865 M	0.52 M	1.18 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.729 M	0.292 M	0.204 M	0.558 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0561 M	0.0574 M	0.048 M	0.0678 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.555 M	0.251 M	0.145 M	0.365 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	3.48 M	1.53 M	1.16 M	2.88 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	1.28 M	0.641 M	0.433 M	1.03 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	5.72 M	2.89 M	2.55 M	6.69 M	0.0284 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	4.2 M	2.23 M	1.98 M	5.07 M	0.0227 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	2.54 M	1.38 M	1.23 M	3.15 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	2.3 M	1.2 M	1.09 M	2.52 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	3.53 M	2.27 M	1.98 M	4.66 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.973 M	0.674 M	0.574 M	1.24 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	2.32 M	1.32 M	1.17 M	2.93 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	1.88 M	0.825 M	0.69 M	1.77 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.424 M	0.254 M	0.226 M	0.568 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	1.76 M	0.945 M	0.809 M	2.04 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	32.8	17.6	14.8	36.7	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CE8-V	3CF9	3CF9	3CF9	3CF9-V	3CG9
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60	1.70 - 1.70	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034092	18034063	18034067	18034071	18034075	18034268
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.8	87.6	83.8	88.1	69.6	91.6
Acenaphthene-d10 % recovery**	%	TM218		86.6	93.1	87.7	96	91.7	82.6
Phenanthrene-d10 % recovery**	%	TM218		87.2	95.5	85	100	68.8	88.5
Chrysene-d12 % recovery**	%	TM218		84.8	94.7	79.3	96.7	82.3	77.8
Perylene-d12 % recovery**	%	TM218		80.1	96	72.4	95	83.4	74.2
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.181 M	2.46 M	0.56 M	172 M	0.272 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0766 M	0.256 M	0.143 M	1.78 M	0.119 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0299 M	0.222 M	0.0647 M	36.7 M	0.0218 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.111 M	0.296 M	0.161 M	18.8 M	0.0476 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	0.743 M	1.61 M	0.985 M	24.5 M	0.519 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.41 M	0.519 M	0.339 M	3.17 M	0.228 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	1.22 M	2.68 M	1.74 M	2.03 M	1.35 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	0.88 M	1.94 M	1.25 M	1.06 M	1.04 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	0.579 M	1.03 M	0.875 M	0.173 M	0.705 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	0.536 M	0.894 M	0.709 M	0.187 M	0.64 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	0.863 M	1.24 M	1.27 M	0.17 M	1.09 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.251 M	0.332 M	0.33 M	0.0503 M	0.385 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	0.47 M	0.878 M	0.775 M	0.109 M	0.652 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.27 M	0.706 M	0.469 M	0.0808 M	0.391 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.0826 M	0.146 M	0.14 M	<0.023 M	0.127 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.292 M	0.656 M	0.495 M	0.068 M	0.461 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	7	15.9	10.3	261	8.04

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CG9	3CG9-V	3CH9	3CH9	3CH9-V	3CI9
			Depth (m)	1.00 - 1.00	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034274	18034279	18034247	18034255	18034261	18034057
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.2	89.8	91.3	88.7	88.2	91.1
Acenaphthene-d10 % recovery**	%	TM218		78.8	89	88.5	84.1	82	91.5
Phenanthrene-d10 % recovery**	%	TM218		85.2	89.2	85.5	83.9	86.1	82.2
Chrysene-d12 % recovery**	%	TM218		78.7	84	75.7	77.2	83.8	76.5
Perylene-d12 % recovery**	%	TM218		77.7	82.2	71.8	72.3	82.2	71.1
Naphthalene	<0.009 mg/kg	TM218		0.0206 M	0.106 M	0.229 M	0.245 M	<0.009 M	1.41 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	0.0855 M	0.141 M	<0.012 M	0.52 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0235 M	0.0343 M	0.0335 M	<0.008 M	0.151 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0254 M	0.0922 M	0.102 M	<0.01 M	0.374 M
Phenanthrene	<0.015 mg/kg	TM218		0.0249 M	0.105 M	0.668 M	0.793 M	<0.015 M	2.51 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.336 M	0.344 M	<0.016 M	0.882 M
Fluoranthene	<0.017 mg/kg	TM218		0.047 M	0.167 M	1.38 M	1.63 M	<0.017 M	5.32 M
Pyrene	<0.015 mg/kg	TM218		0.0375 M	0.12 M	1.1 M	1.27 M	<0.015 M	4.09 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0194 M	0.0574 M	0.79 M	0.798 M	<0.014 M	2.81 M
Chrysene	<0.01 mg/kg	TM218		0.0265 M	0.0797 M	0.849 M	0.717 M	<0.01 M	2.61 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0404 M	0.107 M	1.07 M	1.25 M	<0.015 M	4.01 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.0403 M	0.398 M	0.377 M	<0.014 M	1.16 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0231 M	0.0589 M	0.657 M	0.681 M	<0.015 M	2.47 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.0412 M	0.373 M	0.41 M	<0.018 M	1.43 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	0.13 M	0.141 M	<0.023 M	0.489 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.0533 M	0.452 M	0.501 M	<0.024 M	1.66 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.239	0.984	8.65	9.43	<0.118	31.9

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CI9	3CI9-V				
			Depth (m)	1.00 - 1.00	1.30 - 1.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	30/07/2018	30/07/2018				
			Sample Time	00:00	00:00				
			Date Received	31/07/2018	31/07/2018				
			SDG Ref	180731-56	180731-56				
			Lab Sample No.(s)	18034108	18034165				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.4	86.1				
Acenaphthene-d10 % recovery**	%	TM218		86.5	73.6				
Phenanthrene-d10 % recovery**	%	TM218		86.5	83.4				
Chrysene-d12 % recovery**	%	TM218		76.9	79.6				
Perylene-d12 % recovery**	%	TM218		72.8	77.9				
Naphthalene	<0.009 mg/kg	TM218		0.344 M	<0.009 M				
Acenaphthylene	<0.012 mg/kg	TM218		0.124 M	<0.012 M				
Acenaphthene	<0.008 mg/kg	TM218		0.0609 M	<0.008 M				
Fluorene	<0.01 mg/kg	TM218		0.181 M	<0.01 M				
Phenanthrene	<0.015 mg/kg	TM218		1.27 M	<0.015 M				
Anthracene	<0.016 mg/kg	TM218		0.359 M	<0.016 M				
Fluoranthene	<0.017 mg/kg	TM218		1.71 M	<0.017 M				
Pyrene	<0.015 mg/kg	TM218		1.26 M	<0.015 M				
Benz(a)anthracene	<0.014 mg/kg	TM218		0.76 M	<0.014 M				
Chrysene	<0.01 mg/kg	TM218		0.744 M	<0.01 M				
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.11 M	<0.015 M				
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.403 M	<0.014 M				
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.696 M	<0.015 M				
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.366 M	<0.018 M				
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.116 M	<0.023 M				
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.422 M	<0.024 M				
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		9.93	<0.118				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA8	3CA8	3CA8-V	3CB7	3CB7	3CB8
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.90 - 0.90	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034143	18034148	18034152	18034156	18034160	18034133
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		120	80	115	79.8	76.2	105
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M	<0.1 M	<0.1 M	0.162 M	0.166 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0257	0.0472
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0185	0.0288
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0534	0.0368
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.786	1.34	<0.1	10.8	2.05	1.67
Aliphatics >C16-C21	<0.1 mg/kg	TM173		6.09	6.51	<0.1	4.17	12.8	8.42
Aliphatics >C21-C35	<0.1 mg/kg	TM173		28.7	32.1	0.146	71.1	68.2	44.2
Aliphatics >C35-C44	<0.1 mg/kg	TM173		7.44	8.73	<0.1	66.3	23.8	15.3
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		43	48.7	0.146	152	107	69.6
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0123	0.0196
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0349	0.0242
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.758	1.56	6.53	5.49	3.5	1.81
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		12.9	13.7	51.5	28.9	22.7	9.02
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		71.6	72.1	160	110	82.8	35
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		23.8	26.1	47.7	49.3	32.7	16.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.71	9.03	15.9	18.4	11.9	6.12
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		109	113	266	194	142	62.3
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		152	162	266	346	249	132

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CB7-V	3CB8-V	3CC7	3CC7	3CC8	3CC8
			Depth (m)	1.00 - 1.00	0.40 - 0.40	0.50 - 0.50	0.90 - 0.90	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034169	18034139	18034173	18034179	18034114	18034118
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		120	100	85	81	76.8	71.2
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M	<0.1 M	<0.1 M	0.121 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	0.0148	<0.01	0.0234	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	0.0117	<0.01	0.0164	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	0.0138	<0.01	0.0351	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.13	<0.1	1.84	2.24	5.47	1.65
Aliphatics >C16-C21	<0.1 mg/kg	TM173		4.11	<0.1	11.4	9.5	22.3	13.4
Aliphatics >C21-C35	<0.1 mg/kg	TM173		38.9	7.12	46.2	37	52.5	40.4
Aliphatics >C35-C44	<0.1 mg/kg	TM173		11.4	<0.1	19.1	12.3	14.8	16.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		55.5	7.12	78.6	61	95.1	72.4
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0117	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0234	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.12	0.183	1.57	2.65	16.3	6
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.88	1.72	12.1	13.6	235	53.3
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		108	17	52.3	50.8	501	161
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		33.4	4.44	27.3	23	161	51.7
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		11.3	1.16	11.1	9.62	49.6	18
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		152	23.3	93.3	90.1	914	272
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		208	30.4	172	151	1010	344

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CC7-V	3CC8-V	3CD7	3CD8	3CD8	3CD7-V
			Depth (m)	1.00 - 1.00	1.10 - 1.10	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034189	18034123	18034200	18034096	18034100	18034209
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		93.6	116	98	61.7	87.6	96.9
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M	<0.1 M	<0.1 #	0.184 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0152	0.0437	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0117	0.0345	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0176	0.0403	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	1.9	3.22	5.28	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1	9.79	21.7	25.2	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	<0.1	52.2	95.4	88.1	9.92
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	18.2	23.3	21.4	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	<0.1	82.1	144	140	9.92
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.023	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0117	0.0265	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	1.49	6.78	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	<0.1	8.42	69.8	<0.1	1.98
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		1.01	5.25	34.7	193	4.17	30.9
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		2.33	0.42	16.6	57	0.389	13.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		1.41	0.238	6.18	20.7	0.219	5.42
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		3.34	5.67	61.2	326	4.56	46
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		3.34	5.67	143	470	145	55.9

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CD8-V	3CE7	3CE7	3CE8	3CE8	3CE7-V
			Depth (m)	1.20 - 1.20	0.50 - 0.50	0.90 - 0.90	0.50 - 0.50	1.00 - 1.00	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034104	18034218	18034228	18034081	18034086	18034240
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		80.5	42	83.5	95.7	87.5	95.6
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	0.397 #	<0.1 M	<0.1 M	0.189 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.034	0.0655	<0.01	<0.01	0.0483	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0202	0.0555	<0.01	<0.01	0.0345	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	0.135	<0.01	<0.01	0.0426	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	2.81	2.19	5.87	2.58	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		0.982	16.2	13.2	19.6	13.3	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1.47	81	68.8	68.7	50	0.931
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	32.5	25.7	23.8	17.6	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		2.45	133	110	118	83.5	0.931
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0126	0.0366	<0.01	<0.01	0.023	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	0.0899	<0.01	<0.01	0.0288	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	3.88	2.73	2.46	4.25	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	24.9	21.1	19.9	33.3	0.218
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		3.3	92.6	68.8	73.4	95.6	2.68
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	45	31.7	32.1	37.7	4.29
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	18.4	13.2	12.8	14.7	2.4
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		3.3	166	124	128	171	7.19
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		5.81	299	234	246	255	8.12

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CE8-V	3CF9	3CF9	3CF9	3CF9-V	3CG9
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60	1.70 - 1.70	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034092	18034063	18034067	18034071	18034075	18034268
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		100	82	93.5	89	91.7	80.6
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M	0.356 M	0.152 M	118 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.1	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	0.0269	0.044	0.298	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	0.0582	0.0242	10.1	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	0.133	0.0374	60.2	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	1.72	24.2	3.95	514	3.36
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	8.15	167	14.9	3530	13.4
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	48.6	88.4	80.1	700	58.6
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	18.4	21.2	36.9	<0.2	17.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	76.8	301	136	4740	92.8
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.1	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.1	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	0.0392	0.0165	6.75	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	0.0885	0.0253	40.2	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.55	13.7	2.54	461	1.74
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.301	7.18	57.9	11.4	1050	9.59
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		3	40.2	65.1	50.9	309	48.2
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		2.97	22.3	27.1	35.8	20.8	23.4
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		1.61	8.94	11	16	7.36	9.36
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		6.27	71.3	164	101	1840	83
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		6.27	148	465	237	6710	176

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CG9	3CG9-V	3CH9	3CH9	3CH9-V	3CI9
			Depth (m)	1.00 - 1.00	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034274	18034279	18034247	18034255	18034261	18034057
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		124	90.6	98.2	89.6	83.7	79.1
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	0.0196	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	0.015	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	0.0161	<0.01	<0.01	0.0112
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	1.53	1.95	<0.1	3.95
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	1.21	11.2	13.1	<0.1	20.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		6.39	8.35	60.8	70.8	<0.1	79.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	16.8	23.6	<0.1	23.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		6.39	9.56	90.4	109	<0.1	127
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	0.0104	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	0.0104	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		14.7	<0.1	1.16	2.13	<0.1	5.02
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		201	2.53	6	22.2	<0.1	33.6
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		724	32.9	37	69.4	5.33	119
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		275	7.91	21	31.8	0.689	44.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		113	2.65	8.69	13.6	<0.1	16.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		1220	43.3	65.1	126	6.01	202
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1220	52.8	156	235	6.01	329

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CI9	3CI9-V				
			Depth (m)	1.00 - 1.00	1.30 - 1.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	30/07/2018	30/07/2018				
			Sample Time	00:00	00:00				
			Date Received	31/07/2018	31/07/2018				
			SDG Ref	180731-56	180731-56				
			Lab Sample No.(s)	18034108	18034165				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		79.1	100				
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.186 M	<0.1 M				
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0383	<0.01				
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0325	<0.01				
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.051	<0.01				
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.66	<0.1				
Aliphatics >C16-C21	<0.1 mg/kg	TM173		9.08	<0.1				
Aliphatics >C21-C35	<0.1 mg/kg	TM173		45	<0.1				
Aliphatics >C35-C44	<0.1 mg/kg	TM173		18.5	<0.1				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		75.2	<0.1				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.022	<0.01				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0336	<0.01				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.23	<0.1				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		5.25	<0.1				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		24.9	12.6				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		13.4	4.2				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		5.35	1.65				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		44.7	16.8				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		120	16.8				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA8	3CA8	3CA8-V	3CB7	3CB7	3CB8
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.90 - 0.90	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034143	18034148	18034152	18034156	18034160	18034133
			AGS Reference						
Dibromofluoromethane**	%	TM116		102	97.7	109	104	104	105
Toluene-d8**	%	TM116		98.7	93.6	99	98.9	97.7	95.9
4-Bromofluorobenzene**	%	TM116		95.8	81.2	95.1	90.3	88.5	87.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	0.221 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CB7-V	3CB8-V	3CC7	3CC7	3CC8	3CC8
			Depth (m)	1.00 - 1.00	0.40 - 0.40	0.50 - 0.50	0.90 - 0.90	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034169	18034139	18034173	18034179	18034114	18034118
			AGS Reference						
Dibromofluoromethane**	%	TM116		106	109	105	101	99.1	109
Toluene-d8**	%	TM116		99.4	99.1	99.7	96	96.6	99.9
4-Bromofluorobenzene**	%	TM116		94.1	94.8	94.5	86.8	80.2	89.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	0.548 M	0.181 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CC7-V	3CC8-V	3CD7	3CD8	3CD8	3CD7-V
			Depth (m)	1.00 - 1.00	1.10 - 1.10	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034189	18034123	18034200	18034096	18034100	18034209
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	110	109	104	102	106
Toluene-d8**	%	TM116		99.9	99.7	97.1	97.7	98.3	98.7
4-Bromofluorobenzene**	%	TM116		95.8	97.4	95.3	86.1	83.6	95
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	0.275 M	0.221 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CD8-V	3CE7	3CE7	3CE8	3CE8	3CE7-V
			Depth (m)	1.20 - 1.20	0.50 - 0.50	0.90 - 0.90	0.50 - 0.50	1.00 - 1.00	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034104	18034218	18034228	18034081	18034086	18034240
			AGS Reference						
Dibromofluoromethane**	%	TM116		111	95.3	105	105	105	103
Toluene-d8**	%	TM116		100	95.8	98	98.5	97.4	99.8
4-Bromofluorobenzene**	%	TM116		97.1	78.3	92.6	90.4	85.9	96.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.474 M	<0.13 M	<0.13 M	0.462 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CE8-V	3CF9	3CF9	3CF9	3CF9-V	3CG9
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60	1.70 - 1.70	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034092	18034063	18034067	18034071	18034075	18034268
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	111	107	102	108	104
Toluene-d8**	%	TM116		100	99.1	98.1	98.2	92.5	99.2
4-Bromofluorobenzene**	%	TM116		96.7	93.6	92.7	87.2	81.8	87.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	0.574 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	2.39 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	0.651 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	0.907 M	0.148 M	689 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	3.61	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CG9	3CG9-V	3CH9	3CH9	3CH9-V	3CI9
			Depth (m)	1.00 - 1.00	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018	30/07/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018	31/07/2018
			SDG Ref	180731-56	180731-56	180731-56	180731-56	180731-56	180731-56
			Lab Sample No.(s)	18034274	18034279	18034247	18034255	18034261	18034057
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	114	106	106	113	107
Toluene-d8**	%	TM116		98.8	98.7	98.9	98.8	99.5	98.3
4-Bromofluorobenzene**	%	TM116		95.7	92	91.6	92	94.4	89.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CI9	3CI9-V				
			Depth (m)	1.00 - 1.00	1.30 - 1.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	30/07/2018	30/07/2018				
			Sample Time	00:00	00:00				
			Date Received	31/07/2018	31/07/2018				
			SDG Ref	180731-56	180731-56				
			Lab Sample No.(s)	18034108	18034165				
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	113				
Toluene-d8**	%	TM116		98.1	99.6				
4-Bromofluorobenzene**	%	TM116		87.9	95.9				
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M				
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M				
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M				
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #				
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Naphthalene	<0.013 mg/kg	TM116		0.323 M	<0.13 M				
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4				

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA8 1.00 - 1.00 SOLID 30/07/2018 00:00:00 31/07/2018 17:15:26 180731-56 18034148 TM048	01/08/2018	James Richards	Material typical of asbestos cement debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CB7 0.90 - 0.90 SOLID 30/07/2018 00:00:00 31/07/2018 17:13:01 180731-56 18034160 TM048	01/08/2018	Lucy Caroe	Soil containing material typical of asbestos cement	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CB8 0.30 - 0.30 SOLID 30/07/2018 00:00:00 31/07/2018 17:13:14 180731-56 18034133 TM048	01/08/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CC7 0.90 - 0.90 SOLID 30/07/2018 00:00:00 31/07/2018 17:14:57 180731-56 18034179 TM048	01/08/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CC8 1.00 - 1.00 SOLID 30/07/2018 00:00:00 31/07/2018 17:16:47 180731-56 18034118 TM048	01/08/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CD7 0.50 - 0.50 SOLID 30/07/2018 00:00:00 31/07/2018 17:17:03 180731-56 18034200 TM048	01/08/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180731-56 **Client Reference:** **Report Number:** 467730
Location: Llanwern **Order Number:** LLA465 **Superseded Report:** 467729

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CD8 1.00 - 1.00 SOLID 30/07/2018 00:00:00 31/07/2018 17:25:16 180731-56 18034100 TM048	01/08/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CE7 0.90 - 0.90 SOLID 30/07/2018 00:00:00 31/07/2018 16:17:13 180731-56 18034228 TM048	01/08/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CE8 1.00 - 1.00 SOLID 30/07/2018 00:00:00 31/07/2018 17:57:47 180731-56 18034086 TM048	01/08/2018	Marcin Magdziarek	Loose fibre in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CF9 0.50 - 0.50 SOLID 30/07/2018 00:00:00 31/07/2018 18:00:07 180731-56 18034063 TM048	01/08/2018	Marcin Magdziarek	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CF9 1.60 - 1.60 SOLID 30/07/2018 00:00:00 31/07/2018 17:57:58 180731-56 18034071 TM048	01/08/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CG9 0.50 - 0.50 SOLID 30/07/2018 00:00:00 31/07/2018 17:31:30 180731-56 18034268 TM048	01/08/2018	Marcin Magdziarek	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**	**Report Number:** 467730
Location:	Llanwern	**Order Number:** LLA465	**Superseded Report:** 467729

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CH9 0.50 - 0.50 SOLID 30/07/2018 00:00:00 31/07/2018 15:03:10 180731-56 18034247 TM048	01/08/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CI9 0.50 - 0.50 SOLID 30/07/2018 00:00:00 31/07/2018 15:00:03 180731-56 18034057 TM048	01/08/2018	Lucy Caroe	Fibre bundle in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA8 1.00 - 1.00 SOLID 30/07/2018 00:00:00 31/07/2018 17:15:57 180731-56 18034148 TM304	None (#)	N/A	0.0164 (#)	<0.001 (#)	0.0164 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CB7 0.90 - 0.90 SOLID 30/07/2018 00:00:00 31/07/2018 17:13:21 180731-56 18034160 TM304	No (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CE8 1.00 - 1.00 SOLID 30/07/2018 00:00:00 31/07/2018 17:58:15 180731-56 18034086 TM304	No (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CF9 0.50 - 0.50 SOLID 30/07/2018 00:00:00 31/07/2018 18:00:30 180731-56 18034063 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CG9 0.50 - 0.50 SOLID 30/07/2018 00:00:00 31/07/2018 17:33:32 180731-56 18034268 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CI9 0.50 - 0.50 SOLID 30/07/2018 00:00:00 31/07/2018 15:01:05 180731-56 18034057 TM304	No (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034057
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CI9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00352	<0.0005	0.0352	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00531	<0.0003	0.0531	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00117	<0.0004	0.0117	<0.004	-	-	-
Selenium	0.00311	<0.001	0.0311	<0.01	-	-	-
Vanadium	0.0986	<0.001	0.986	<0.01	-	-	-
Zinc	0.00348	<0.001	0.0348	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000593	<0.00001	0.000593	<0.0001	-	-	-
Acenaphthene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Fluoranthene by GCMS	0.000175	<0.000005	0.00175	<0.00005	-	-	-
Anthracene by GCMS	0.0000271	<0.000005	0.000271	<0.00005	-	-	-
Phenanthrene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Fluorene by GCMS	0.00002	<0.000005	0.0002	<0.00005	-	-	-
Chrysene by GCMS	0.0000375	<0.000005	0.000375	<0.00005	-	-	-
Pyrene by GCMS	0.000153	<0.000005	0.00153	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000417	<0.000005	0.000417	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000387	<0.000005	0.000387	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000229	<0.000002	0.000229	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000767	<0.000082	0.00767	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.78
Conductivity (µS/cm)	309.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034057
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CI9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.78
Conductivity (µS/cm)	309.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034063
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CF9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.35	<0.2	3.5	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0127	<0.0005	0.127	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0214	<0.0003	0.214	<0.003	-	-	-
Lead	0.000223	<0.0002	0.00223	<0.002	-	-	-
Manganese	0.00387	<0.003	0.0387	<0.03	-	-	-
Nickel	0.00253	<0.0004	0.0253	<0.004	-	-	-
Selenium	0.00457	<0.001	0.0457	<0.01	-	-	-
Vanadium	0.117	<0.001	1.17	<0.01	-	-	-
Zinc	0.00135	<0.001	0.0135	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000394	<0.00001	0.000394	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000123	<0.000005	0.000123	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000169	<0.000005	0.00169	<0.00005	-	-	-
Anthracene by GCMS	0.0000245	<0.000005	0.000245	<0.00005	-	-	-
Phenanthrene by GCMS	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Fluorene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Chrysene by GCMS	0.0000503	<0.000005	0.000503	<0.00005	-	-	-
Pyrene by GCMS	0.000125	<0.000005	0.00125	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000045	<0.000005	0.00045	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000589	<0.000005	0.000589	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000306	<0.000002	0.000306	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000633	<0.000005	0.0000633	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00003	<0.000005	0.0003	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000756	<0.000082	0.00756	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.34
Conductivity (µS/cm)	209.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
08/08/2018 18:53:50

18:53:23 08/08/2018

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034063
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CF9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.34
Conductivity (µS/cm)	209.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034067
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CF9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.464	<0.2	4.64	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0163	<0.0005	0.163	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.017	<0.0003	0.17	<0.003	-	-	-
Lead	0.000448	<0.0002	0.00448	<0.002	-	-	-
Manganese	0.00428	<0.003	0.0428	<0.03	-	-	-
Nickel	0.00276	<0.0004	0.0276	<0.004	-	-	-
Selenium	0.00475	<0.001	0.0475	<0.01	-	-	-
Vanadium	0.112	<0.001	1.12	<0.01	-	-	-
Zinc	0.00138	<0.001	0.0138	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0286	<0.019	0.286	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0278	<0.00001	0.278	<0.0001	-	-	-
Acenaphthene by GCMS	0.0021	<0.000005	0.021	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000071	<0.000005	0.00071	<0.00005	-	-	-
Fluoranthene by GCMS	0.000238	<0.000005	0.00238	<0.00005	-	-	-
Anthracene by GCMS	0.0000754	<0.000005	0.000754	<0.00005	-	-	-
Phenanthrene by GCMS	0.000446	<0.000005	0.00446	<0.00005	-	-	-
Fluorene by GCMS	0.000512	<0.000005	0.00512	<0.00005	-	-	-
Chrysene by GCMS	0.0000679	<0.000005	0.000679	<0.00005	-	-	-
Pyrene by GCMS	0.000184	<0.000005	0.00184	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000066	<0.000005	0.00066	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000615	<0.000005	0.000615	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000878	<0.000002	0.000878	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000201	<0.000005	0.000201	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000898	<0.000005	0.000898	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000767	<0.000005	0.000767	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.032	<0.000082	0.32	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.114	<0.05	1.14	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	9.91
Conductivity (µS/cm)	162.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034067
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CF9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.052	<0.01	0.52	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.034	<0.01	0.34	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.114	<0.01	1.14	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	9.91
Conductivity (µS/cm)	162.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034071
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CF9
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00191	<0.0005	0.0191	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00271	<0.0003	0.0271	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0295	<0.003	0.295	<0.03	-	-	-
Nickel	0.00121	<0.0004	0.0121	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00226	<0.001	0.0226	<0.01	-	-	-
Zinc	0.00164	<0.001	0.0164	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000238	<0.00001	0.000238	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000674	<0.000005	0.0000674	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000366	<0.000005	0.000366	<0.00005	-	-	-
Anthracene by GCMS	0.00000632	<0.000005	0.0000632	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000315	<0.000005	0.000315	<0.00005	-	-	-
Fluorene by GCMS	0.00000791	<0.000005	0.0000791	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000298	<0.000005	0.000298	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000368	<0.000002	0.0000368	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000146	<0.000082	0.00146	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	8.84
Conductivity (µS/cm)	108.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034071
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CF9
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	8.84
Conductivity (µS/cm)	108.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034081
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CE8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.512	<0.2	5.12	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00586	<0.0005	0.0586	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0118	<0.0003	0.118	<0.003	-	-	-
Lead	0.00038	<0.0002	0.0038	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00219	<0.0004	0.0219	<0.004	-	-	-
Selenium	0.00445	<0.001	0.0445	<0.01	-	-	-
Vanadium	0.177	<0.001	1.77	<0.01	-	-	-
Zinc	0.00103	<0.001	0.0103	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000107	<0.00001	0.00107	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000321	<0.000005	0.000321	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000943	<0.000005	0.000943	<0.00005	-	-	-
Anthracene by GCMS	0.0000172	<0.000005	0.000172	<0.00005	-	-	-
Phenanthrene by GCMS	0.00012	<0.000005	0.0012	<0.00005	-	-	-
Fluorene by GCMS	0.0000279	<0.000005	0.000279	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000775	<0.000005	0.000775	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000503	<0.000005	0.0000503	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000329	<0.000002	0.0000329	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000504	<0.000082	0.00504	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.78
Conductivity (µS/cm)	397.00
Temperature (°C)	23.60
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034081
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CE8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.78
Conductivity (µS/cm)	397.00
Temperature (°C)	23.60
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034086
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CE8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.54	<0.2	5.4	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00805	<0.0005	0.0805	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00974	<0.0003	0.0974	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00239	<0.0004	0.0239	<0.004	-	-	-
Selenium	0.00536	<0.001	0.0536	<0.01	-	-	-
Vanadium	0.22	<0.001	2.2	<0.01	-	-	-
Zinc	0.00281	<0.001	0.0281	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000175	<0.00001	0.00175	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000323	<0.000005	0.000323	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000768	<0.000005	0.000768	<0.00005	-	-	-
Fluoranthene by GCMS	0.000487	<0.000005	0.00487	<0.00005	-	-	-
Anthracene by GCMS	0.000095	<0.000005	0.00095	<0.00005	-	-	-
Phenanthrene by GCMS	0.000444	<0.000005	0.00444	<0.00005	-	-	-
Fluorene by GCMS	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Chrysene by GCMS	0.0000937	<0.000005	0.000937	<0.00005	-	-	-
Pyrene by GCMS	0.000379	<0.000005	0.00379	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000748	<0.000005	0.000748	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000966	<0.000005	0.000966	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000038	<0.000005	0.00038	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000556	<0.000002	0.000556	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000582	<0.000005	0.000582	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000408	<0.000005	0.000408	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00226	<0.000082	0.0226	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.29
Conductivity (µS/cm)	265.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034086
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CE8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.29
Conductivity (µS/cm)	265.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034096
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CD8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.96	<0.2	9.6	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00712	<0.0005	0.0712	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0168	<0.0003	0.168	<0.003	-	-	-
Lead	0.00039	<0.0002	0.0039	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00379	<0.0004	0.0379	<0.004	-	-	-
Selenium	0.00931	<0.001	0.0931	<0.01	-	-	-
Vanadium	0.381	<0.001	3.81	<0.01	-	-	-
Zinc	0.0033	<0.001	0.033	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000143	<0.00001	0.00143	<0.0001	-	-	-
Acenaphthene by GCMS	0.000164	<0.000005	0.00164	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000707	<0.000005	0.000707	<0.00005	-	-	-
Fluoranthene by GCMS	0.000226	<0.000005	0.00226	<0.00005	-	-	-
Anthracene by GCMS	0.0000389	<0.000005	0.000389	<0.00005	-	-	-
Phenanthrene by GCMS	0.00034	<0.000005	0.0034	<0.00005	-	-	-
Fluorene by GCMS	0.000125	<0.000005	0.00125	<0.00005	-	-	-
Chrysene by GCMS	0.0000268	<0.000005	0.000268	<0.00005	-	-	-
Pyrene by GCMS	0.000148	<0.000005	0.00148	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000209	<0.000005	0.000209	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000272	<0.000005	0.000272	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000139	<0.000002	0.000139	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000179	<0.000005	0.000179	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00138	<0.000082	0.0138	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.86
Conductivity (µS/cm)	376.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034096
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CD8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.86
Conductivity (µS/cm)	376.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034100
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CD8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.93	<0.2	9.3	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00864	<0.0005	0.0864	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00105	<0.001	0.0105	<0.01	-	-	-
Copper	0.0111	<0.0003	0.111	<0.003	-	-	-
Lead	0.00057	<0.0002	0.0057	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00402	<0.0004	0.0402	<0.004	-	-	-
Selenium	0.0103	<0.001	0.103	<0.01	-	-	-
Vanadium	0.382	<0.001	3.82	<0.01	-	-	-
Zinc	0.00184	<0.001	0.0184	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.2	<0.019	2	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000236	<0.00001	0.00236	<0.0001	-	-	-
Acenaphthene by GCMS	0.000028	<0.000005	0.00028	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000661	<0.000005	0.000661	<0.00005	-	-	-
Fluoranthene by GCMS	0.000153	<0.000005	0.00153	<0.00005	-	-	-
Anthracene by GCMS	0.0000457	<0.000005	0.000457	<0.00005	-	-	-
Phenanthrene by GCMS	0.000257	<0.000005	0.00257	<0.00005	-	-	-
Fluorene by GCMS	0.0000672	<0.000005	0.000672	<0.00005	-	-	-
Chrysene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Pyrene by GCMS	0.000157	<0.000005	0.00157	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00002	<0.000005	0.0002	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000154	<0.000005	0.000154	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000604	<0.000005	0.0000604	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000846	<0.000002	0.0000846	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000111	<0.000005	0.000111	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000057	<0.000005	0.000057	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00109	<0.000082	0.0109	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.89
Conductivity (µS/cm)	412.00
Temperature (°C)	23.50
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034100
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CD8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.89
Conductivity (µS/cm)	412.00
Temperature (°C)	23.50
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034108
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CI9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.6	<0.2	6	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00467	<0.0005	0.0467	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00149	<0.001	0.0149	<0.01	-	-	-
Copper	0.0103	<0.0003	0.103	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00203	<0.0004	0.0203	<0.004	-	-	-
Selenium	0.00361	<0.001	0.0361	<0.01	-	-	-
Vanadium	0.144	<0.001	1.44	<0.01	-	-	-
Zinc	0.00378	<0.001	0.0378	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000142	<0.00001	0.00142	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000291	<0.000005	0.000291	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00003	<0.000005	0.0003	<0.00005	-	-	-
Fluoranthene by GCMS	0.000141	<0.000005	0.00141	<0.00005	-	-	-
Anthracene by GCMS	0.0000255	<0.000005	0.000255	<0.00005	-	-	-
Phenanthrene by GCMS	0.000129	<0.000005	0.00129	<0.00005	-	-	-
Fluorene by GCMS	0.0000264	<0.000005	0.000264	<0.00005	-	-	-
Chrysene by GCMS	0.0000364	<0.000005	0.000364	<0.00005	-	-	-
Pyrene by GCMS	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000329	<0.000005	0.000329	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000397	<0.000005	0.000397	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000172	<0.000005	0.000172	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000218	<0.000002	0.000218	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000206	<0.000005	0.000206	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000814	<0.000082	0.00814	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.69
Conductivity (µS/cm)	295.00
Temperature (°C)	24.50
Volume Leachant (Litres)	0.885

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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034108
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CI9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.69
Conductivity (µS/cm)	295.00
Temperature (°C)	24.50
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034114
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CC8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00924	<0.0005	0.0924	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00701	<0.0003	0.0701	<0.003	-	-	-
Lead	0.000471	<0.0002	0.00471	<0.002	-	-	-
Manganese	0.00371	<0.003	0.0371	<0.03	-	-	-
Nickel	0.00167	<0.0004	0.0167	<0.004	-	-	-
Selenium	0.004	<0.001	0.04	<0.01	-	-	-
Vanadium	0.0789	<0.001	0.789	<0.01	-	-	-
Zinc	0.00175	<0.001	0.0175	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.32	<0.019	3.2	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000857	<0.00001	0.000857	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000717	<0.000005	0.000717	<0.00005	-	-	-
Fluoranthene by GCMS	0.000533	<0.000005	0.00533	<0.00005	-	-	-
Anthracene by GCMS	0.0000711	<0.000005	0.000711	<0.00005	-	-	-
Phenanthrene by GCMS	0.00025	<0.000005	0.0025	<0.00005	-	-	-
Fluorene by GCMS	0.0000503	<0.000005	0.000503	<0.00005	-	-	-
Chrysene by GCMS	0.000216	<0.000005	0.00216	<0.00005	-	-	-
Pyrene by GCMS	0.000401	<0.000005	0.00401	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000169	<0.000005	0.00169	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000317	<0.000005	0.00317	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000179	<0.000002	0.00179	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000373	<0.000005	0.000373	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000228	<0.000005	0.00228	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000146	<0.000005	0.00146	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0029	<0.000082	0.029	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	9.34
Conductivity (µS/cm)	186.00
Temperature (°C)	23.90
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034114
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CC8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	9.34
Conductivity (µS/cm)	186.00
Temperature (°C)	23.90
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034118
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CC8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.34	<0.2	3.4	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0116	<0.0005	0.116	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0124	<0.0003	0.124	<0.003	-	-	-
Lead	0.00062	<0.0002	0.0062	<0.002	-	-	-
Manganese	0.00414	<0.003	0.0414	<0.03	-	-	-
Nickel	0.00268	<0.0004	0.0268	<0.004	-	-	-
Selenium	0.00575	<0.001	0.0575	<0.01	-	-	-
Vanadium	0.151	<0.001	1.51	<0.01	-	-	-
Zinc	0.00394	<0.001	0.0394	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.291	<0.019	2.91	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000154	<0.00001	0.00154	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000536	<0.000005	0.000536	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00014	<0.000005	0.0014	<0.00005	-	-	-
Fluoranthene by GCMS	0.000997	<0.000005	0.00997	<0.00005	-	-	-
Anthracene by GCMS	0.00019	<0.000005	0.0019	<0.00005	-	-	-
Phenanthrene by GCMS	0.000809	<0.000005	0.00809	<0.00005	-	-	-
Fluorene by GCMS	0.00018	<0.000005	0.0018	<0.00005	-	-	-
Chrysene by GCMS	0.000305	<0.000005	0.00305	<0.00005	-	-	-
Pyrene by GCMS	0.000651	<0.000005	0.00651	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000261	<0.000005	0.00261	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000369	<0.000005	0.00369	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000196	<0.000002	0.00196	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000354	<0.000005	0.000354	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000195	<0.000005	0.00195	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000149	<0.000005	0.00149	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00483	<0.000082	0.0483	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	9.82
Conductivity (µS/cm)	250.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034118
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CC8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	9.82
Conductivity (µS/cm)	250.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034133
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CB8
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00699	<0.0005	0.0699	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00652	<0.0003	0.0652	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00128	<0.0004	0.0128	<0.004	-	-	-
Selenium	0.00314	<0.001	0.0314	<0.01	-	-	-
Vanadium	0.116	<0.001	1.16	<0.01	-	-	-
Zinc	0.00218	<0.001	0.0218	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000431	<0.00001	0.000431	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000874	<0.000005	0.0000874	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000259	<0.000005	0.000259	<0.00005	-	-	-
Fluoranthene by GCMS	0.00024	<0.000005	0.0024	<0.00005	-	-	-
Anthracene by GCMS	0.0000338	<0.000005	0.000338	<0.00005	-	-	-
Phenanthrene by GCMS	0.000124	<0.000005	0.00124	<0.00005	-	-	-
Fluorene by GCMS	0.0000237	<0.000005	0.000237	<0.00005	-	-	-
Chrysene by GCMS	0.0000749	<0.000005	0.000749	<0.00005	-	-	-
Pyrene by GCMS	0.000183	<0.000005	0.00183	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000709	<0.000005	0.000709	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000462	<0.000005	0.000462	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000608	<0.000002	0.000608	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000544	<0.000005	0.000544	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000442	<0.000005	0.000442	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00116	<0.000082	0.0116	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.43
Conductivity (µS/cm)	214.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.887

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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034133
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CB8
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.014	<0.01	0.14	<0.1	-	-	-
Aromatics >C7-C8	0.02	<0.01	0.2	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	0.014	<0.007	0.14	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.041	<0.01	0.41	<0.1	-	-	-
Toluene by GC	0.02	<0.004	0.2	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	0.034	<0.028	0.34	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.43
Conductivity (µS/cm)	214.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034143
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CA8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0123	<0.001	0.123	<0.01	-	-	-
Copper	0.0026	<0.0003	0.026	<0.003	-	-	-
Lead	0.000691	<0.0002	0.00691	<0.002	-	-	-
Manganese	0.0054	<0.003	0.054	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00217	<0.001	0.0217	<0.01	-	-	-
Zinc	0.0254	<0.001	0.254	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000157	<0.00001	0.00157	<0.0001	-	-	-
Acenaphthene by GCMS	0.000294	<0.000005	0.00294	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000887	<0.000005	0.0000887	<0.00005	-	-	-
Fluoranthene by GCMS	0.00173	<0.000005	0.0173	<0.00005	-	-	-
Anthracene by GCMS	0.000167	<0.000005	0.00167	<0.00005	-	-	-
Phenanthrene by GCMS	0.00136	<0.000005	0.0136	<0.00005	-	-	-
Fluorene by GCMS	0.0000993	<0.000005	0.000993	<0.00005	-	-	-
Chrysene by GCMS	0.000189	<0.000005	0.00189	<0.00005	-	-	-
Pyrene by GCMS	0.00183	<0.000005	0.0183	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000503	<0.000005	0.000503	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000148	<0.000002	0.000148	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00606	<0.000082	0.0606	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	11.84
Conductivity (µS/cm)	2,420.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034143
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CA8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	11.84
Conductivity (µS/cm)	2,420.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034148
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CA8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0144	<0.001	0.144	<0.01	-	-	-
Copper	0.0117	<0.0003	0.117	<0.003	-	-	-
Lead	0.00254	<0.0002	0.0254	<0.002	-	-	-
Manganese	0.00657	<0.003	0.0657	<0.03	-	-	-
Nickel	0.00136	<0.0004	0.0136	<0.004	-	-	-
Selenium	0.00115	<0.001	0.0115	<0.01	-	-	-
Vanadium	0.00128	<0.001	0.0128	<0.01	-	-	-
Zinc	0.0119	<0.001	0.119	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.289	<0.019	2.89	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000439	<0.00001	0.000439	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000213	<0.000005	0.000213	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Fluoranthene by GCMS	0.000565	<0.000005	0.00565	<0.00005	-	-	-
Anthracene by GCMS	0.0000322	<0.000005	0.000322	<0.00005	-	-	-
Phenanthrene by GCMS	0.000387	<0.000005	0.00387	<0.00005	-	-	-
Fluorene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Chrysene by GCMS	0.000041	<0.000005	0.00041	<0.00005	-	-	-
Pyrene by GCMS	0.000429	<0.000005	0.00429	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000208	<0.000005	0.000208	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000396	<0.000002	0.0000396	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00159	<0.000082	0.0159	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	12.07
Conductivity (µS/cm)	4,980.00
Temperature (°C)	22.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034148
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CA8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	12.07
Conductivity (µS/cm)	4,980.00
Temperature (°C)	22.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.31
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.8
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034156
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CB7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.564	<0.2	5.64	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000908	<0.0005	0.00908	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0012	<0.001	0.012	<0.01	-	-	-
Copper	0.022	<0.0003	0.22	<0.003	-	-	-
Lead	0.000519	<0.0002	0.00519	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00679	<0.0004	0.0679	<0.004	-	-	-
Selenium	0.00116	<0.001	0.0116	<0.01	-	-	-
Vanadium	0.0112	<0.001	0.112	<0.01	-	-	-
Zinc	0.00688	<0.001	0.0688	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000438	<0.00001	0.00438	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000923	<0.000005	0.000923	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000967	<0.000005	0.000967	<0.00005	-	-	-
Fluoranthene by GCMS	0.000692	<0.000005	0.00692	<0.00005	-	-	-
Anthracene by GCMS	0.0000941	<0.000005	0.000941	<0.00005	-	-	-
Phenanthrene by GCMS	0.000592	<0.000005	0.00592	<0.00005	-	-	-
Fluorene by GCMS	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Chrysene by GCMS	0.000174	<0.000005	0.00174	<0.00005	-	-	-
Pyrene by GCMS	0.000584	<0.000005	0.00584	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000142	<0.000005	0.00142	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000204	<0.000005	0.00204	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000854	<0.000005	0.000854	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000119	<0.000002	0.00119	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00011	<0.000005	0.0011	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000798	<0.000005	0.000798	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00363	<0.000082	0.0363	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	11.66
Conductivity (µS/cm)	1,400.00
Temperature (°C)	23.60
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.31
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.8
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034156
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CB7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	11.66
Conductivity (µS/cm)	1,400.00
Temperature (°C)	23.60
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.67
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.4
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034160
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CB7
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.933	<0.2	9.33	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00145	<0.0005	0.0145	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00121	<0.001	0.0121	<0.01	-	-	-
Copper	0.0259	<0.0003	0.259	<0.003	-	-	-
Lead	0.0007	<0.0002	0.007	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00777	<0.0004	0.0777	<0.004	-	-	-
Selenium	0.00106	<0.001	0.0106	<0.01	-	-	-
Vanadium	0.0109	<0.001	0.109	<0.01	-	-	-
Zinc	0.00793	<0.001	0.0793	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000401	<0.00001	0.00401	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000471	<0.000005	0.000471	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000996	<0.000005	0.000996	<0.00005	-	-	-
Fluoranthene by GCMS	0.000421	<0.000005	0.00421	<0.00005	-	-	-
Anthracene by GCMS	0.0000482	<0.000005	0.000482	<0.00005	-	-	-
Phenanthrene by GCMS	0.00042	<0.000005	0.0042	<0.00005	-	-	-
Fluorene by GCMS	0.0000612	<0.000005	0.000612	<0.00005	-	-	-
Chrysene by GCMS	0.0000255	<0.000005	0.000255	<0.00005	-	-	-
Pyrene by GCMS	0.000345	<0.000005	0.00345	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000226	<0.000005	0.000226	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000469	<0.000002	0.0000469	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00191	<0.000082	0.0191	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	11.77
Conductivity (µS/cm)	1,810.00
Temperature (°C)	23.90
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.67
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.4
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034160
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CB7
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	11.77
Conductivity (µS/cm)	1,810.00
Temperature (°C)	23.90
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.4
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034173
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CC7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.264	<0.2	2.64	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00461	<0.0005	0.0461	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00687	<0.0003	0.0687	<0.003	-	-	-
Lead	0.00141	<0.0002	0.0141	<0.002	-	-	-
Manganese	0.0121	<0.003	0.121	<0.03	-	-	-
Nickel	0.00137	<0.0004	0.0137	<0.004	-	-	-
Selenium	0.00306	<0.001	0.0306	<0.01	-	-	-
Vanadium	0.132	<0.001	1.32	<0.01	-	-	-
Zinc	0.00792	<0.001	0.0792	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0868	<0.019	0.868	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000527	<0.00001	0.000527	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000195	<0.000005	0.000195	<0.00005	-	-	-
Fluoranthene by GCMS	0.000182	<0.000005	0.00182	<0.00005	-	-	-
Anthracene by GCMS	0.0000317	<0.000005	0.000317	<0.00005	-	-	-
Phenanthrene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Fluorene by GCMS	0.0000196	<0.000005	0.000196	<0.00005	-	-	-
Chrysene by GCMS	0.0000469	<0.000005	0.000469	<0.00005	-	-	-
Pyrene by GCMS	0.00015	<0.000005	0.0015	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000407	<0.000005	0.000407	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000528	<0.000005	0.000528	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000188	<0.000005	0.000188	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000273	<0.000002	0.000273	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000527	<0.000005	0.0000527	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000256	<0.000005	0.000256	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000188	<0.000005	0.000188	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000822	<0.000082	0.00822	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.73
Conductivity (µS/cm)	287.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.4
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034173
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CC7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.73
Conductivity (µS/cm)	287.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034179
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CC7
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.277	<0.2	2.77	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00442	<0.0005	0.0442	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00809	<0.0003	0.0809	<0.003	-	-	-
Lead	0.000733	<0.0002	0.00733	<0.002	-	-	-
Manganese	0.00618	<0.003	0.0618	<0.03	-	-	-
Nickel	0.0017	<0.0004	0.017	<0.004	-	-	-
Selenium	0.00278	<0.001	0.0278	<0.01	-	-	-
Vanadium	0.136	<0.001	1.36	<0.01	-	-	-
Zinc	0.0104	<0.001	0.104	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.471	<0.019	4.71	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000063	<0.00001	0.00063	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000173	<0.000005	0.000173	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000309	<0.000005	0.000309	<0.00005	-	-	-
Fluoranthene by GCMS	0.000166	<0.000005	0.00166	<0.00005	-	-	-
Anthracene by GCMS	0.0000318	<0.000005	0.000318	<0.00005	-	-	-
Phenanthrene by GCMS	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Fluorene by GCMS	0.0000299	<0.000005	0.000299	<0.00005	-	-	-
Chrysene by GCMS	0.0000327	<0.000005	0.000327	<0.00005	-	-	-
Pyrene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000331	<0.000005	0.000331	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000338	<0.000005	0.000338	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000178	<0.000002	0.000178	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000777	<0.000082	0.00777	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.78
Conductivity (µS/cm)	338.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034179
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CC7
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.78
Conductivity (µS/cm)	338.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.6
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034200
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CD7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.264	<0.2	2.64	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000331	<0.00001	0.000331	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.003	<0.0005	0.03	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0211	<0.0003	0.211	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00284	<0.0004	0.0284	<0.004	-	-	-
Selenium	0.00316	<0.001	0.0316	<0.01	-	-	-
Vanadium	0.0834	<0.001	0.834	<0.01	-	-	-
Zinc	0.00326	<0.001	0.0326	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000179	<0.00001	0.00179	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000522	<0.000005	0.000522	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000359	<0.000005	0.000359	<0.00005	-	-	-
Fluoranthene by GCMS	0.000349	<0.000005	0.00349	<0.00005	-	-	-
Anthracene by GCMS	0.0000713	<0.000005	0.000713	<0.00005	-	-	-
Phenanthrene by GCMS	0.000455	<0.000005	0.00455	<0.00005	-	-	-
Fluorene by GCMS	0.0000669	<0.000005	0.000669	<0.00005	-	-	-
Chrysene by GCMS	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
Pyrene by GCMS	0.000273	<0.000005	0.00273	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000235	<0.000005	0.000235	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000811	<0.000005	0.0000811	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000438	<0.000002	0.0000438	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00154	<0.000082	0.0154	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	11.21
Conductivity (µS/cm)	395.00
Temperature (°C)	10.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.6
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034200
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CD7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	11.21
Conductivity (µS/cm)	395.00
Temperature (°C)	10.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034218
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CE7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.369	<0.2	3.69	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00423	<0.0005	0.0423	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00193	<0.001	0.0193	<0.01	-	-	-
Copper	0.018	<0.0003	0.18	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00164	<0.0004	0.0164	<0.004	-	-	-
Selenium	0.00315	<0.001	0.0315	<0.01	-	-	-
Vanadium	0.101	<0.001	1.01	<0.01	-	-	-
Zinc	0.0382	<0.001	0.382	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000178	<0.00001	0.00178	<0.0001	-	-	-
Acenaphthene by GCMS	0.000048	<0.000005	0.00048	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000188	<0.000005	0.000188	<0.00005	-	-	-
Fluoranthene by GCMS	0.0001	<0.000005	0.001	<0.00005	-	-	-
Anthracene by GCMS	0.000025	<0.000005	0.00025	<0.00005	-	-	-
Phenanthrene by GCMS	0.000095	<0.000005	0.00095	<0.00005	-	-	-
Fluorene by GCMS	0.0000529	<0.000005	0.000529	<0.00005	-	-	-
Chrysene by GCMS	0.0000457	<0.000005	0.000457	<0.00005	-	-	-
Pyrene by GCMS	0.0000783	<0.000005	0.000783	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000479	<0.000005	0.000479	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000655	<0.000005	0.000655	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000257	<0.000005	0.000257	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000393	<0.000002	0.000393	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000641	<0.000005	0.0000641	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000382	<0.000005	0.000382	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000026	<0.000005	0.00026	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000891	<0.000082	0.00891	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.85
Conductivity (µS/cm)	380.00
Temperature (°C)	23.60
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034218
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CE7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.85
Conductivity (µS/cm)	380.00
Temperature (°C)	23.60
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034228
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CE7
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.659	<0.2	6.59	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00335	<0.0005	0.0335	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0215	<0.0003	0.215	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00291	<0.0004	0.0291	<0.004	-	-	-
Selenium	0.0041	<0.001	0.041	<0.01	-	-	-
Vanadium	0.108	<0.001	1.08	<0.01	-	-	-
Zinc	0.0039	<0.001	0.039	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0009	<0.00001	0.009	<0.0001	-	-	-
Acenaphthene by GCMS	0.000103	<0.000005	0.00103	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000107	<0.000005	0.00107	<0.00005	-	-	-
Fluoranthene by GCMS	0.000196	<0.000005	0.00196	<0.00005	-	-	-
Anthracene by GCMS	0.0000441	<0.000005	0.000441	<0.00005	-	-	-
Phenanthrene by GCMS	0.000282	<0.000005	0.00282	<0.00005	-	-	-
Fluorene by GCMS	0.0000796	<0.000005	0.000796	<0.00005	-	-	-
Chrysene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Pyrene by GCMS	0.000161	<0.000005	0.00161	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000082	<0.000005	0.000082	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000458	<0.000002	0.0000458	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00191	<0.000082	0.0191	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	461.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034228
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CE7
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	461.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.888

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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034247
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CH9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00245	<0.0005	0.0245	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00884	<0.0003	0.0884	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00254	<0.0004	0.0254	<0.004	-	-	-
Selenium	0.00272	<0.001	0.0272	<0.01	-	-	-
Vanadium	0.0743	<0.001	0.743	<0.01	-	-	-
Zinc	0.00385	<0.001	0.0385	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000255	<0.00001	0.000255	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000748	<0.000005	0.0000748	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000514	<0.000005	0.000514	<0.00005	-	-	-
Anthracene by GCMS	0.00000907	<0.000005	0.0000907	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000314	<0.000005	0.000314	<0.00005	-	-	-
Fluorene by GCMS	0.00000544	<0.000005	0.0000544	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000545	<0.000005	0.000545	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000185	<0.000082	0.00185	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	11.16
Conductivity (µS/cm)	512.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.887

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034247
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CH9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	11.16
Conductivity (µS/cm)	512.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034255
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CH9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00223	<0.0005	0.0223	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00121	<0.001	0.0121	<0.01	-	-	-
Copper	0.00666	<0.0003	0.0666	<0.003	-	-	-
Lead	0.00151	<0.0002	0.0151	<0.002	-	-	-
Manganese	0.00478	<0.003	0.0478	<0.03	-	-	-
Nickel	0.00219	<0.0004	0.0219	<0.004	-	-	-
Selenium	0.00199	<0.001	0.0199	<0.01	-	-	-
Vanadium	0.0673	<0.001	0.673	<0.01	-	-	-
Zinc	0.0117	<0.001	0.117	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.443	<0.019	4.43	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000246	<0.00001	0.000246	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000816	<0.000005	0.0000816	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000675	<0.000005	0.0000675	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000537	<0.000005	0.000537	<0.00005	-	-	-
Anthracene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000312	<0.000005	0.000312	<0.00005	-	-	-
Fluorene by GCMS	0.00000548	<0.000005	0.0000548	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000532	<0.000005	0.000532	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000245	<0.000002	0.0000245	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000197	<0.000082	0.00197	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	11.04
Conductivity (µS/cm)	436.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034255
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CH9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	11.04
Conductivity (µS/cm)	436.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034268
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CG9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00387	<0.0005	0.0387	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00645	<0.0003	0.0645	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00179	<0.0004	0.0179	<0.004	-	-	-
Selenium	0.00269	<0.001	0.0269	<0.01	-	-	-
Vanadium	0.0926	<0.001	0.926	<0.01	-	-	-
Zinc	0.00131	<0.001	0.0131	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000317	<0.00001	0.000317	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000708	<0.000005	0.0000708	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Fluoranthene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Anthracene by GCMS	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000624	<0.000005	0.000624	<0.00005	-	-	-
Fluorene by GCMS	0.00000916	<0.000005	0.0000916	<0.00005	-	-	-
Chrysene by GCMS	0.0000328	<0.000005	0.000328	<0.00005	-	-	-
Pyrene by GCMS	0.0000936	<0.000005	0.000936	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000344	<0.000005	0.000344	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000038	<0.000005	0.00038	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000148	<0.000005	0.000148	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000206	<0.000002	0.000206	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000185	<0.000005	0.000185	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000133	<0.000005	0.000133	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000517	<0.000082	0.00517	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.52
Conductivity (µS/cm)	261.00
Temperature (°C)	23.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034268
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CG9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	10.52
Conductivity (µS/cm)	261.00
Temperature (°C)	23.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034274
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CG9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.214	<0.2	2.14	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00469	<0.0005	0.0469	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00902	<0.0003	0.0902	<0.003	-	-	-
Lead	0.000355	<0.0002	0.00355	<0.002	-	-	-
Manganese	0.00425	<0.003	0.0425	<0.03	-	-	-
Nickel	0.00194	<0.0004	0.0194	<0.004	-	-	-
Selenium	0.00422	<0.001	0.0422	<0.01	-	-	-
Vanadium	0.149	<0.001	1.49	<0.01	-	-	-
Zinc	0.00339	<0.001	0.0339	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.33	<0.019	3.3	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000028	<0.00001	0.00028	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000271	<0.000005	0.000271	<0.00005	-	-	-
Anthracene by GCMS	0.00000571	<0.000005	0.0000571	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000311	<0.000005	0.000311	<0.00005	-	-	-
Fluorene by GCMS	0.00000696	<0.000005	0.0000696	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000201	<0.000005	0.000201	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000024	<0.000002	0.000024	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000121	<0.000082	0.00121	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	8.68
Conductivity (µS/cm)	100.00
Temperature (°C)	22.90
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180731-56
Lab Sample Number(s)	18034274
Sampled Date	30-Jul-2018
Customer Sample Ref.	3CG9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Aug-2018
pH (pH Units)	8.68
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CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Test Completion Dates

Lab Sample No(s)	18034143	18034148	18034152	18034156	18034160	18034133	18034169	18034139	18034173	18034179
Customer Sample Ref.	3CA8	3CA8	3CA8-V	3CB7	3CB7	3CB8	3CB7-V	3CB8-V	3CC7	3CC7
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.90 - 0.90	0.30 - 0.30	1.00 - 1.00	0.40 - 0.40	0.50 - 0.50	0.90 - 0.90
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		07-Aug-2018			07-Aug-2018	07-Aug-2018				07-Aug-2018
Ammoniacal Nitrogen	07-Aug-2018	06-Aug-2018		06-Aug-2018	06-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018
Ammonium Soil by Titration	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018
Anions by Kone (soil)		02-Aug-2018			02-Aug-2018	02-Aug-2018				02-Aug-2018
Asbestos ID in Solid Samples		01-Aug-2018			01-Aug-2018	01-Aug-2018				01-Aug-2018
Asbestos Quantification - Full		06-Aug-2018			06-Aug-2018					
CEN 10:1 Leachate (1 Stage)	01-Aug-2018	01-Aug-2018		01-Aug-2018	01-Aug-2018	01-Aug-2018			01-Aug-2018	01-Aug-2018
CEN Readings	03-Aug-2018	03-Aug-2018		02-Aug-2018	02-Aug-2018	03-Aug-2018			03-Aug-2018	03-Aug-2018
Cyanide Comp/Free/Total/Thiocyanate	07-Aug-2018	07-Aug-2018	03-Aug-2018	06-Aug-2018	06-Aug-2018	07-Aug-2018	02-Aug-2018	03-Aug-2018	07-Aug-2018	07-Aug-2018
Dissolved Metals by ICP-MS	07-Aug-2018	07-Aug-2018		07-Aug-2018	07-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018
EPH CWG (Aliphatic) Aqueous GC (W)	06-Aug-2018	06-Aug-2018		06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018
EPH CWG (Aliphatic) GC (S)	03-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	03-Aug-2018	03-Aug-2018	06-Aug-2018	03-Aug-2018	03-Aug-2018	02-Aug-2018
EPH CWG (Aromatic) Aqueous GC (W)	06-Aug-2018	06-Aug-2018		06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018
EPH CWG (Aromatic) GC (S)	03-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	03-Aug-2018	03-Aug-2018	06-Aug-2018	03-Aug-2018	03-Aug-2018	02-Aug-2018
GRO by GC-FID (S)	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018
GRO by GC-FID (W)	07-Aug-2018	07-Aug-2018		03-Aug-2018	03-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018
Mercury Dissolved	06-Aug-2018	06-Aug-2018		06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018
Metals in solid samples by OES	07-Aug-2018	06-Aug-2018	07-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	07-Aug-2018	06-Aug-2018	07-Aug-2018
PAH by GCMS	07-Aug-2018	07-Aug-2018	07-Aug-2018	03-Aug-2018	03-Aug-2018	07-Aug-2018	03-Aug-2018	07-Aug-2018	03-Aug-2018	03-Aug-2018
PAH Spec MS - Aqueous (W)	07-Aug-2018	07-Aug-2018		06-Aug-2018	06-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018
pH	03-Aug-2018	05-Aug-2018	03-Aug-2018	05-Aug-2018	05-Aug-2018	05-Aug-2018	05-Aug-2018	03-Aug-2018	05-Aug-2018	03-Aug-2018
pH Value	05-Aug-2018	05-Aug-2018		03-Aug-2018	03-Aug-2018	05-Aug-2018			05-Aug-2018	05-Aug-2018
Phenols by HPLC (S)	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	03-Aug-2018	02-Aug-2018	02-Aug-2018
Sample description	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018
Total Organic Carbon	06-Aug-2018	03-Aug-2018	06-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	03-Aug-2018	06-Aug-2018	08-Aug-2018	06-Aug-2018
Total Sulphate		02-Aug-2018			02-Aug-2018	02-Aug-2018				06-Aug-2018
Total Sulphur		02-Aug-2018			02-Aug-2018	02-Aug-2018				02-Aug-2018
TPH CWG (W)	07-Aug-2018	07-Aug-2018		06-Aug-2018	06-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018
TPH CWG GC (S)	03-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	03-Aug-2018	03-Aug-2018	06-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018
VOC MS (S)	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018

Lab Sample No(s)	18034114	18034118	18034189	18034123	18034200	18034096	18034100	18034209	18034104	18034218
Customer Sample Ref.	3CC8	3CC8	3CC7-V	3CC8-V	3CD7	3CD8	3CD8	3CD7-V	3CD8-V	3CE7
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.00 - 1.00	1.10 - 1.10	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	0.70 - 0.70	1.20 - 1.20	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		07-Aug-2018			07-Aug-2018		07-Aug-2018			
Ammoniacal Nitrogen	06-Aug-2018	07-Aug-2018			06-Aug-2018	06-Aug-2018	06-Aug-2018			07-Aug-2018
Ammonium Soil by Titration	01-Aug-2018	01-Aug-2018	02-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018
Anions by Kone (soil)		02-Aug-2018			02-Aug-2018		02-Aug-2018			
Asbestos ID in Solid Samples		01-Aug-2018			01-Aug-2018		01-Aug-2018			
CEN 10:1 Leachate (1 Stage)	01-Aug-2018	06-Aug-2018			01-Aug-2018	06-Aug-2018	06-Aug-2018			01-Aug-2018
CEN Readings	02-Aug-2018	03-Aug-2018			07-Aug-2018	03-Aug-2018	03-Aug-2018			02-Aug-2018
Cyanide Comp/Free/Total/Thiocyanate	06-Aug-2018	06-Aug-2018	02-Aug-2018	03-Aug-2018	06-Aug-2018	06-Aug-2018	07-Aug-2018	02-Aug-2018	03-Aug-2018	06-Aug-2018
Dissolved Metals by ICP-MS	07-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018	07-Aug-2018			07-Aug-2018
EPH CWG (Aliphatic) Aqueous GC (W)	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018
EPH CWG (Aliphatic) GC (S)	06-Aug-2018	03-Aug-2018	02-Aug-2018	06-Aug-2018	03-Aug-2018	02-Aug-2018	06-Aug-2018	03-Aug-2018	06-Aug-2018	02-Aug-2018
EPH CWG (Aromatic) Aqueous GC (W)	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018
EPH CWG (Aromatic) GC (S)	06-Aug-2018	03-Aug-2018	02-Aug-2018	06-Aug-2018	03-Aug-2018	02-Aug-2018	06-Aug-2018	03-Aug-2018	06-Aug-2018	02-Aug-2018
GRO by GC-FID (S)	07-Aug-2018	03-Aug-2018	02-Aug-2018	03-Aug-2018	03-Aug-2018	07-Aug-2018	07-Aug-2018	02-Aug-2018	03-Aug-2018	03-Aug-2018
GRO by GC-FID (W)	03-Aug-2018	07-Aug-2018			03-Aug-2018	07-Aug-2018	07-Aug-2018			06-Aug-2018
Mercury Dissolved	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018
Metals in solid samples by OES	07-Aug-2018	06-Aug-2018	06-Aug-2018	07-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	07-Aug-2018	07-Aug-2018
PAH by GCMS	07-Aug-2018	03-Aug-2018	03-Aug-2018	07-Aug-2018	07-Aug-2018	03-Aug-2018	07-Aug-2018	03-Aug-2018	07-Aug-2018	03-Aug-2018
PAH Spec MS - Aqueous (W)	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018
pH	05-Aug-2018	05-Aug-2018	03-Aug-2018	03-Aug-2018	05-Aug-2018	03-Aug-2018	05-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018
pH Value	03-Aug-2018	03-Aug-2018			03-Aug-2018	03-Aug-2018	03-Aug-2018			03-Aug-2018
Phenols by HPLC (S)	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	03-Aug-2018	03-Aug-2018	02-Aug-2018	02-Aug-2018
Sample description	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	01-Aug-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018
Total Organic Carbon	03-Aug-2018	03-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	03-Aug-2018	08-Aug-2018	03-Aug-2018	06-Aug-2018	06-Aug-2018
Total Sulphate		02-Aug-2018			02-Aug-2018		02-Aug-2018			
Total Sulphur		02-Aug-2018			02-Aug-2018		02-Aug-2018			
TPH CWG (W)	06-Aug-2018	07-Aug-2018			06-Aug-2018	07-Aug-2018	07-Aug-2018			06-Aug-2018
TPH CWG GC (S)	07-Aug-2018	03-Aug-2018	02-Aug-2018	06-Aug-2018	03-Aug-2018	07-Aug-2018	07-Aug-2018	03-Aug-2018	06-Aug-2018	03-Aug-2018
VOC MS (S)	03-Aug-2018	03-Aug-2018	02-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	02-Aug-2018	03-Aug-2018	02-Aug-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180731-56	**Client Reference:**		**Report Number:**	467730
Location:	Llanwern	**Order Number:**	LLA465	**Superseded Report:**	467729

Lab Sample No(s)	18034228	18034081	18034086	18034240	18034092	18034063	18034067	18034071	18034075	18034268
Customer Sample Ref.	3CE7	3CE8	3CE8	3CE7-V	3CE8-V	3CF9	3CF9	3CF9	3CF9-V	3CG9
AGS Ref.										
Depth	0.90 - 0.90	0.50 - 0.50	1.00 - 1.00	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60	1.70 - 1.70	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	07-Aug-2018		07-Aug-2018			07-Aug-2018		07-Aug-2018		07-Aug-2018
Ammoniacal Nitrogen	06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018	07-Aug-2018		07-Aug-2018
Ammonium Soil by Titration	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018
Anions by Kone (soil)	02-Aug-2018		02-Aug-2018			02-Aug-2018		02-Aug-2018		02-Aug-2018
Asbestos ID in Solid Samples	01-Aug-2018		01-Aug-2018			01-Aug-2018		01-Aug-2018		01-Aug-2018
Asbestos Quantification - Full			06-Aug-2018			06-Aug-2018				06-Aug-2018
CEN 10:1 Leachate (1 Stage)	01-Aug-2018	01-Aug-2018	01-Aug-2018			01-Aug-2018	01-Aug-2018	01-Aug-2018		01-Aug-2018
CEN Readings	03-Aug-2018	03-Aug-2018	03-Aug-2018			03-Aug-2018	03-Aug-2018	03-Aug-2018		03-Aug-2018
Cyanide Comp/Free/Total/Thiocyanate	06-Aug-2018	06-Aug-2018	06-Aug-2018	02-Aug-2018	02-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	02-Aug-2018	07-Aug-2018
Dissolved Metals by ICP-MS	07-Aug-2018	07-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018	07-Aug-2018		07-Aug-2018
EPH CWG (Aliphatic) Aqueous GC (W)	06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018	06-Aug-2018		06-Aug-2018
EPH CWG (Aliphatic) GC (S)	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	03-Aug-2018	03-Aug-2018
EPH CWG (Aromatic) Aqueous GC (W)	06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018	06-Aug-2018		06-Aug-2018
EPH CWG (Aromatic) GC (S)	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	03-Aug-2018	03-Aug-2018
GRO by GC-FID (S)	02-Aug-2018	03-Aug-2018	03-Aug-2018	02-Aug-2018	07-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	07-Aug-2018	03-Aug-2018
GRO by GC-FID (W)	06-Aug-2018	03-Aug-2018	03-Aug-2018			03-Aug-2018	03-Aug-2018	03-Aug-2018		07-Aug-2018
Mercury Dissolved	06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018	06-Aug-2018		06-Aug-2018
Metals in solid samples by OES	07-Aug-2018	06-Aug-2018	07-Aug-2018	06-Aug-2018	06-Aug-2018	07-Aug-2018	07-Aug-2018	07-Aug-2018	06-Aug-2018	06-Aug-2018
PAH by GCMS	03-Aug-2018	03-Aug-2018	03-Aug-2018	02-Aug-2018	03-Aug-2018	02-Aug-2018	03-Aug-2018	02-Aug-2018	03-Aug-2018	03-Aug-2018
PAH Spec MS - Aqueous (W)	06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018	06-Aug-2018		07-Aug-2018
pH	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	05-Aug-2018
pH Value	03-Aug-2018	03-Aug-2018	03-Aug-2018			03-Aug-2018	03-Aug-2018	03-Aug-2018		05-Aug-2018
Phenols by HPLC (S)	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018
Sample description	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018
Total Organic Carbon	03-Aug-2018	08-Aug-2018	06-Aug-2018	03-Aug-2018	08-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	08-Aug-2018	03-Aug-2018
Total Sulphate	06-Aug-2018		07-Aug-2018			06-Aug-2018		06-Aug-2018		02-Aug-2018
Total Sulphur	02-Aug-2018		02-Aug-2018			02-Aug-2018		02-Aug-2018		02-Aug-2018
TPH CWG (W)	06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018	06-Aug-2018		07-Aug-2018
TPH CWG GC (S)	02-Aug-2018	03-Aug-2018	03-Aug-2018	02-Aug-2018	07-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	07-Aug-2018	03-Aug-2018
VOC MS (S)	02-Aug-2018	03-Aug-2018	03-Aug-2018	02-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	06-Aug-2018

Lab Sample No(s)	18034274	18034279	18034247	18034255	18034261	18034057	18034108	18034165
Customer Sample Ref.	3CG9	3CG9-V	3CH9	3CH9	3CH9-V	3CI9	3CI9	3CI9-V
AGS Ref.								
Depth	1.00 - 1.00	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)			07-Aug-2018			07-Aug-2018		
Ammoniacal Nitrogen	06-Aug-2018		06-Aug-2018	06-Aug-2018		07-Aug-2018	06-Aug-2018	
Ammonium Soil by Titration	02-Aug-2018	02-Aug-2018	01-Aug-2018	02-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018	01-Aug-2018
Anions by Kone (soil)			02-Aug-2018			02-Aug-2018		
Asbestos ID in Solid Samples			01-Aug-2018			01-Aug-2018		
Asbestos Quantification - Full						06-Aug-2018		
CEN 10:1 Leachate (1 Stage)	01-Aug-2018		01-Aug-2018	01-Aug-2018		01-Aug-2018	01-Aug-2018	
CEN Readings	03-Aug-2018		03-Aug-2018	03-Aug-2018		03-Aug-2018	02-Aug-2018	
Cyanide Comp/Free/Total/Thiocyanate	07-Aug-2018	02-Aug-2018	07-Aug-2018	07-Aug-2018	02-Aug-2018	07-Aug-2018	06-Aug-2018	02-Aug-2018
Dissolved Metals by ICP-MS	07-Aug-2018		07-Aug-2018	07-Aug-2018		07-Aug-2018	07-Aug-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	06-Aug-2018		06-Aug-2018	06-Aug-2018		06-Aug-2018	06-Aug-2018	
EPH CWG (Aliphatic) GC (S)	03-Aug-2018	03-Aug-2018	03-Aug-2018	02-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018
EPH CWG (Aromatic) Aqueous GC (W)	06-Aug-2018		06-Aug-2018	06-Aug-2018		06-Aug-2018	06-Aug-2018	
EPH CWG (Aromatic) GC (S)	03-Aug-2018	03-Aug-2018	03-Aug-2018	02-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018
GRO by GC-FID (S)	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	07-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018
GRO by GC-FID (W)	07-Aug-2018		07-Aug-2018	07-Aug-2018		07-Aug-2018	03-Aug-2018	
Mercury Dissolved	06-Aug-2018		07-Aug-2018	06-Aug-2018		07-Aug-2018	06-Aug-2018	
Metals in solid samples by OES	07-Aug-2018	07-Aug-2018	06-Aug-2018	06-Aug-2018	07-Aug-2018	07-Aug-2018	06-Aug-2018	07-Aug-2018
PAH by GCMS	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018
PAH Spec MS - Aqueous (W)	07-Aug-2018		07-Aug-2018	07-Aug-2018		07-Aug-2018	06-Aug-2018	
pH	05-Aug-2018	03-Aug-2018	05-Aug-2018	05-Aug-2018	03-Aug-2018	05-Aug-2018	03-Aug-2018	03-Aug-2018
pH Value	05-Aug-2018		05-Aug-2018	05-Aug-2018		05-Aug-2018	03-Aug-2018	
Phenols by HPLC (S)	02-Aug-2018	03-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018
Sample description	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018	31-Jul-2018
Total Organic Carbon	06-Aug-2018	08-Aug-2018	03-Aug-2018	03-Aug-2018	08-Aug-2018	06-Aug-2018	03-Aug-2018	06-Aug-2018
Total Sulphate			02-Aug-2018			07-Aug-2018		
Total Sulphur			02-Aug-2018			02-Aug-2018		
TPH CWG (W)	07-Aug-2018		07-Aug-2018	07-Aug-2018		07-Aug-2018	06-Aug-2018	
TPH CWG GC (S)	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	07-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018
VOC MS (S)	03-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	13 August 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180802-25
Your Reference:	
Location:	Llanwern
Report No:	468218

This report has been revised and directly supersedes 468217 in its entirety.

We received 50 samples on Thursday August 02, 2018 and 50 of these samples were scheduled for analysis which was completed on Sunday August 12, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

1291

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18044272	3CB6		0.50 - 0.50	01/08/2018
18044287	3CB9		0.50 - 0.50	01/08/2018
18044280	3CB6-V		1.20 - 1.20	01/08/2018
18044291	3CB9-V		1.00 - 1.00	01/08/2018
18044227	3CC6		0.50 - 0.50	01/08/2018
18044234	3CC6		1.00 - 1.00	01/08/2018
18044241	3CC6		1.50 - 1.50	01/08/2018
18044298	3CC9		0.50 - 0.50	01/08/2018
18044306	3CC9		1.00 - 1.00	01/08/2018
18044248	3CC6-V		1.60 - 1.60	01/08/2018
18044312	3CC9-V		2.00 - 2.00	01/08/2018
18044214	3CD6		0.50 - 0.50	01/08/2018
18044219	3CD6		1.00 - 1.00	01/08/2018
18044325	3CD9		0.50 - 0.50	01/08/2018
18044332	3CD9		1.00 - 1.00	01/08/2018
18044223	3CD6-V		1.20 - 1.20	01/08/2018
18044345	3CD9-V		1.20 - 1.20	01/08/2018
18044571	3CE6		0.50 - 0.50	01/08/2018
18044578	3CE6		1.00 - 1.00	01/08/2018
18044361	3CE9		0.50 - 0.50	01/08/2018
18044369	3CE9		1.00 - 1.00	01/08/2018
18044210	3CE6-V		1.10 - 1.10	01/08/2018
18044375	3CE9-V		1.70 - 1.70	01/08/2018
18044533	3CF6		0.50 - 0.50	01/08/2018
18044555	3CF6		0.80 - 0.80	01/08/2018
18044565	3CF6-V		0.90 - 0.90	01/08/2018
18044205	3CG6		0.50 - 0.50	01/08/2018
18044265	3CG6		1.00 - 1.00	01/08/2018
18044350	3CG6		1.50 - 1.50	01/08/2018
18044446	3CG6-V		2.00 - 2.00	01/08/2018
18044382	3CH7		0.50 - 0.50	01/08/2018
18044402	3CH8		0.50 - 0.50	01/08/2018
18044415	3CH8		1.00 - 1.00	01/08/2018
18044389	3CH7-V		0.90 - 0.90	01/08/2018
18044421	3CH8-V		1.10 - 1.10	01/08/2018
18044508	3CI7		0.50 - 0.50	01/08/2018
18044517	3CI7		1.00 - 1.00	01/08/2018
18044432	3CI8		0.50 - 0.50	01/08/2018
18044440	3CI8		1.00 - 1.00	01/08/2018
18044457	3CI8		2.00 - 2.00	01/08/2018
18044548	3CI6-V		0.20 - 0.20	01/08/2018
18044525	3CI7-V		2.00 - 2.00	01/08/2018
18044464	3CI8-V		2.60 - 2.60	01/08/2018
18044485	3CJ7		0.50 - 0.50	01/08/2018
18044493	3CJ7		1.00 - 1.00	01/08/2018
18044470	3CJ8		0.50 - 0.50	01/08/2018
18044501	3CJ7-V		1.40 - 1.40	01/08/2018
18044479	3CJ8-V		0.80 - 0.80	01/08/2018
18044254	SPJC-01		0.00 - 0.00	01/08/2018
18044261	SPJC-02		0.00 - 0.00	01/08/2018

Maximum Sample/Coolbox Temperature (°C) : **12.6**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	18044272			18044287			18044280		18044291			18044227			18044234			18044241		
			Customer Sample Reference	3CB6			3CB9			3CB6-V		3CB9-V			3CC6			3CC6			3CC6		
			AGS Reference																				
			Depth (m)	0.50 - 0.50			0.50 - 0.50			1.20 - 1.20		1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50		
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 18			X			X										X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 33		X			X							X			X			X			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 50			X			X		X		X			X			X				X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 18			X			X										X					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 18		X			X										X						
CEN Readings	All	NDPs: 0 Tests: 33		X			X							X			X			X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 83		X	X		X	X		X		X		X	X		X	X		X	X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 33		X			X							X			X			X			
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33		X			X							X			X			X			
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 50			X			X		X		X			X			X				X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33		X			X							X			X			X			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 50			X			X		X		X			X			X				X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 50				X			X		X		X			X			X				X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 33		X			X							X			X			X			
Mercury Dissolved	All	NDPs: 0 Tests: 33		X			X							X			X			X			

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18044272			18044287			18044280		18044291			18044227			18044234			18044241	
Customer Sample Reference			3CB6			3CB9			3CB6-V		3CB9-V			3CC6			3CC6			3CC6	
AGS Reference																					
Depth (m)			0.50 - 0.50			0.50 - 0.50			1.20 - 1.20		1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 50		X			X		X		X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 50		X			X		X		X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 33	X			X							X			X			X		
pH	All	NDPs: 0 Tests: 50		X			X		X		X			X			X			X	
pH Value	All	NDPs: 0 Tests: 33	X			X							X			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50		X			X		X		X			X			X			X	
Sample description	All	NDPs: 0 Tests: 50		X			X		X		X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 50		X			X		X		X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 18		X			X										X				
Total Sulphur	All	NDPs: 0 Tests: 18		X			X										X				
TPH CWG (W)	All	NDPs: 0 Tests: 33	X			X							X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 50		X			X		X		X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 50			X			X		X		X			X			X			X

18044332	3CD9		1.00 - 1.00	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)
				S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
18044325	3CD9		0.50 - 0.50	X			X			X			X			X			X			X			X			X			X		
					X			X			X			X			X			X			X			X			X			X	
18044219	3CD6		1.00 - 1.00																															
				X			X			X			X			X			X			X			X			X			X		
					X			X			X			X			X			X			X			X			X			X	
18044214	3CD6		0.50 - 0.50	X			X			X			X			X			X			X			X			X			X		
					X			X			X			X			X			X			X			X			X			X	
18044312	3CC9-V		2.00 - 2.00	X			X			X			X			X			X			X			X			X			X		
					X			X			X			X			X			X			X			X			X			X	
18044248	3CC6-V		1.60 - 1.60	X			X			X			X			X			X			X			X			X			X		
					X			X			X			X			X			X			X			X			X			X	
18044306	3CC9		1.00 - 1.00	X			X			X			X			X			X			X			X			X			X		
					X			X			X			X			X			X			X			X			X			X	
18044298	3CC9		0.50 - 0.50	X			X			X			X			X			X			X			X			X			X		
					X			X			X			X			X			X			X			X			X			X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18044332	18044223	18044345	18044571			18044578			18044361			18044369		18044210		
Customer Sample Reference			3CD9	3CD6-V	3CD9-V	3CE6			3CE6			3CE9			3CE9		3CE6-V		
AGS Reference																				
Depth (m)			1.00 - 1.00	1.20 - 1.20	1.20 - 1.20	0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00		1.10 - 1.10		
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)		
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 18							X							X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 33						X			X			X			X			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 50		X		X			X			X			X		X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 18							X							X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 18									X					X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3									X									
CEN Readings	All	NDPs: 0 Tests: 33						X			X			X		X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 83		X		X		X	X		X	X		X	X	X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 33						X			X			X		X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33						X			X			X		X				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 50		X		X			X			X			X		X		X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33						X			X			X		X				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 50		X		X			X			X			X		X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 50	X		X		X			X			X			X		X		X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 33						X			X			X		X				

18044446	3CG6-V		2.00 - 2.00	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB
18044350	3CG6		1.50 - 1.50																																		
18044265	3CG6		1.00 - 1.00																																		
18044205	3CG6		0.50 - 0.50																																		
18044565	3CF6-V		0.90 - 0.90																																		
18044555	3CF6		0.80 - 0.80																																		
18044533	3CF6		0.50 - 0.50																																		
18044375	3CE9-V		1.70 - 1.70																																		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18044332	18044223	18044345	18044571			18044578			18044361			18044369		18044210		
Customer Sample Reference			3CD9	3CD6-V	3CD9-V	3CE6			3CE6			3CE9			3CE9		3CE6-V		
AGS Reference																				
Depth (m)			1.00 - 1.00	1.20 - 1.20	1.20 - 1.20	0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00		1.10 - 1.10		
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)		
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 33						X			X			X			X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 50		X		X			X			X			X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 50		X		X			X			X			X			X		X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 33						X			X			X			X			
pH	All	NDPs: 0 Tests: 50		X		X			X			X			X			X		X
pH Value	All	NDPs: 0 Tests: 33						X			X			X			X			
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50		X		X			X			X			X			X		X
Sample description	All	NDPs: 0 Tests: 50		X		X			X			X			X			X		X
Total Organic Carbon	All	NDPs: 0 Tests: 50		X		X			X			X			X			X		X
Total Sulphate	All	NDPs: 0 Tests: 18										X						X		
Total Sulphur	All	NDPs: 0 Tests: 18										X						X		
TPH CWG (W)	All	NDPs: 0 Tests: 33						X			X			X			X			
TPH CWG GC (S)	All	NDPs: 0 Tests: 50		X		X			X			X			X			X		X
VOC MS (S)	All	NDPs: 0 Tests: 50	X		X		X			X			X			X			X		X

18044446	3CG6-V		2.00 - 2.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
18044350	3CG6		1.50 - 1.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X	
				1kg TUB	S	X			X		X							X			
18044265	3CG6		1.00 - 1.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
				1kg TUB	S	X			X		X							X			
18044205	3CG6		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X	
				1kg TUB	S	X			X		X							X			
18044565	3CF6-V		0.90 - 0.90	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
18044555	3CF6		0.80 - 0.80	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X	
				1kg TUB	S	X			X		X							X			
18044533	3CF6		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
				1kg TUB	S	X			X		X							X			
18044375	3CE9-V		1.70 - 1.70	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18044382			18044402			18044415			18044389		18044421			18044508			18044517	
Customer Sample Reference			3CH7			3CH8			3CH8			3CH7-V		3CH8-V			3CI7			3CI7	
AGS Reference																					
Depth (m)			0.50 - 0.50			0.50 - 0.50			1.00 - 1.00			0.90 - 0.90		1.10 - 1.10			0.50 - 0.50			1.00 - 1.00	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 18		X						X										X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 33	X			X			X							X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 50		X			X			X		X		X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 18		X						X										X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 18	X						X										X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3																	X		
CEN Readings	All	NDPs: 0 Tests: 33	X			X			X							X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 83	X	X		X	X		X	X		X		X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 33	X			X			X							X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33	X			X			X							X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 50		X			X			X		X		X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33	X			X			X							X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 50		X			X			X		X		X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 50			X			X			X		X		X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 33	X			X			X							X			X		

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18044382			18044402			18044415			18044389			18044421			18044508			18044517	
Customer Sample Reference			3CH7			3CH8			3CH8			3CH7-V			3CH8-V			3CI7			3CI7	
AGS Reference																						
Depth (m)			0.50 - 0.50			0.50 - 0.50			1.00 - 1.00			0.90 - 0.90			1.10 - 1.10			0.50 - 0.50			1.00 - 1.00	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 33	X			X			X							X			X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 50		X			X			X		X		X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 50		X			X			X		X		X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 33	X			X			X							X			X			
pH	All	NDPs: 0 Tests: 50		X			X			X		X		X			X			X		
pH Value	All	NDPs: 0 Tests: 33	X			X			X							X			X			
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50		X			X			X		X		X			X			X		
Sample description	All	NDPs: 0 Tests: 50		X			X			X		X		X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 50		X			X			X		X		X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 18		X						X										X		
Total Sulphur	All	NDPs: 0 Tests: 18		X						X										X		
TPH CWG (W)	All	NDPs: 0 Tests: 33	X			X			X							X			X			
TPH CWG GC (S)	All	NDPs: 0 Tests: 50		X			X			X		X		X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 50			X			X			X		X		X			X			X	

18044493	3CJ7		1.00 - 1.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X		
				1kg TUB	S	X			X		X							X			
18044485	3CJ7		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X		
				1kg TUB	S	X			X		X							X			
18044464	3CI8-V		2.60 - 2.60	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X		
18044525	3CI7-V		2.00 - 2.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X		
18044548	3CI6-V		0.20 - 0.20	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X		
18044457	3CI8		2.00 - 2.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X		
				1kg TUB	S	X			X		X							X			
18044440	3CI8		1.00 - 1.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X		
				1kg TUB	S	X			X		X							X			
18044432	3CI8		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X		
				1kg TUB	S	X			X		X							X			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)											
			18044470			18044501		18044479			18044254			18044261
			Customer Sample Reference											
			3CJ8			3CJ7-V		3CJ8-V			SPJC-01			SPJC-02
			AGS Reference											
			Depth (m)											
			0.50 - 0.50			1.40 - 1.40		0.80 - 0.80			0.00 - 0.00			0.00 - 0.00
			Container											
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type											
			S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 18		X							X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 33	X							X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 50		X		X		X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 18		X							X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 18	X							X					
CEN Readings	All	NDPs: 0 Tests: 33	X							X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 83	X	X		X		X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 33	X							X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33	X							X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 50		X		X		X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 33	X							X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 50		X		X		X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 50			X		X		X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 33	X							X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 33	X							X			X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18044470		18044501		18044479		18044254			18044261		
Customer Sample Reference			3CJ8		3CJ7-V		3CJ8-V		SPJC-01			SPJC-02		
AGS Reference														
Depth (m)			0.50 - 0.50		1.40 - 1.40		0.80 - 0.80		0.00 - 0.00			0.00 - 0.00		
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 50		X		X		X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 50		X		X		X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 33	X							X			X		
pH	All	NDPs: 0 Tests: 50		X		X		X			X			X	
pH Value	All	NDPs: 0 Tests: 33	X							X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50		X		X		X			X			X	
Sample description	All	NDPs: 0 Tests: 50		X		X		X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 50		X		X		X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 18		X							X				
Total Sulphur	All	NDPs: 0 Tests: 18		X							X				
TPH CWG (W)	All	NDPs: 0 Tests: 33	X							X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 50		X		X		X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 50			X		X		X			X			X

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18044272	3CB6	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18044287	3CB9	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18044280	3CB6-V	1.20 - 1.20	Grey	Silty Clay	None	Vegetation
18044291	3CB9-V	1.00 - 1.00	Grey	Silty Clay	Vegetation	None
18044227	3CC6	0.50 - 0.50	Dark Brown	Loamy Sand	Vegetation	Stones
18044234	3CC6	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Vegetation
18044241	3CC6	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	Vegetation
18044298	3CC9	0.50 - 0.50	Dark Brown	Silt Loam	Stones	Vegetation
18044306	3CC9	1.00 - 1.00	Dark Brown	Silt Loam	Stones	Crushed Brick
18044248	3CC6-V	1.60 - 1.60	Dark Brown	Silty Clay	None	None
18044312	3CC9-V	2.00 - 2.00	Grey	Silt Loam	Vegetation	None
18044214	3CD6	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18044219	3CD6	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Vegetation
18044325	3CD9	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	Vegetation
18044332	3CD9	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18044223	3CD6-V	1.20 - 1.20	Dark Brown	Silt Loam	None	None
18044345	3CD9-V	1.20 - 1.20	Dark Brown	Silty Clay Loam	Stones	Vegetation
18044571	3CE6	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	Vegetation
18044578	3CE6	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18044361	3CE9	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18044369	3CE9	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
18044210	3CE6-V	1.10 - 1.10	Grey	Silt Loam	Vegetation	None
18044375	3CE9-V	1.70 - 1.70	Grey	Silt Loam	Stones	Vegetation
18044533	3CF6	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	Vegetation
18044555	3CF6	0.80 - 0.80	Dark Brown	Loamy Sand	Stones	Vegetation
18044565	3CF6-V	0.90 - 0.90	Dark Brown	Silt Loam	Stones	Vegetation
18044205	3CG6	0.50 - 0.50	Grey	Sandy Silt Loam	Stones	Vegetation
18044265	3CG6	1.00 - 1.00	Black	Sandy Silt Loam	Stones	Vegetation
18044350	3CG6	1.50 - 1.50	Black	Sandy Silt Loam	Stones	Vegetation
18044446	3CG6-V	2.00 - 2.00	Grey	Silt Loam	Vegetation	None
18044382	3CH7	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	None
18044402	3CH8	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
18044415	3CH8	1.00 - 1.00	Dark Brown	Silt Loam	Stones	Crushed Brick
18044389	3CH7-V	0.90 - 0.90	Dark Brown	Silt Loam	Vegetation	None
18044421	3CH8-V	1.10 - 1.10	Dark Brown	Silty Clay	Vegetation	None
18044508	3CI7	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18044517	3CI7	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Vegetation
18044432	3CI8	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

			Colour	Description	Inclusions	Inclusions 2
18044440	3CI8	1.00 - 1.00	Dark Brown	Silt Loam	Stones	Vegetation
18044457	3CI8	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	Vegetation
18044548	3CI6-V	0.20 - 0.20	Grey	Sandy Clay Loam	Vegetation	Stones
18044525	3CI7-V	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	None
18044464	3CI8-V	2.60 - 2.60	Dark Brown	Silty Clay	None	None
18044485	3CJ7	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
18044493	3CJ7	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Vegetation
18044470	3CJ8	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18044501	3CJ7-V	1.40 - 1.40	Dark Brown	Silt Loam	Vegetation	None
18044479	3CJ8-V	0.80 - 0.80	Dark Brown	Silt Loam	Vegetation	None
18044254	SPJC-01	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
18044261	SPJC-02	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CB6	3CB9	3CB6-V	3CB9-V	3CC6	3CC6
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.20 - 1.20	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044272	18044287	18044280	18044291	18044227	18044234
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	11	22	25	9.7	9.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	91.8 M	203 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.162	0.305				0.269
Sulphate, Total potential	<0.06 %	TM132		0.486	0.915				0.807
Soil Organic Matter (SOM)	<0.35 %	TM132		7.12 #	7.55 #	0.75 #	3.28 #	2.34 #	5.91 #
pH	1 pH Units	TM133		10 M	11.2 M	7.97 M	7.52 M	8.48 M	10.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.49 M	11.1 M	8.85 M	12 M	9.04 M	6 M
Cadmium	<0.02 mg/kg	TM181		0.638 M	1.31 M	<0.02 M	<0.02 M	<0.02 M	0.376 M
Chromium	<0.9 mg/kg	TM181		100 M	113 M	35.7 M	34.8 M	19.4 M	167 M
Copper	<1.4 mg/kg	TM181		15.6 M	22.1 M	13.1 M	15 M	14.3 M	14.8 M
Iron	<1000 mg/kg	TM181		53900 #	109000 #	31000 #	29600 #	66900 #	78700 #
Lead	<0.7 mg/kg	TM181		77.5 M	319 M	22.8 M	29.3 M	35 M	94.6 M
Manganese	<0.13 mg/kg	TM181		4660 M	10400 M	418 M	335 M	3580 M	11000 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		21.6 M	17 M	25.3 M	26.7 M	22.3 M	24.9 M
Selenium	<1 mg/kg	TM181		1.7 #	3.27 #	<1 #	<1 #	1.02 #	3.9 #
Vanadium	<0.2 mg/kg	TM181		83.4 #	251 #	50.6 #	52.4 #	76 #	164 #
Zinc	<1.9 mg/kg	TM181		222 M	1260 M	97.4 M	98.1 M	139 M	623 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.264	0.477				0.332
Calcium	<21 mg/kg	TM224		87800	164000				139000
Magnesium	<8 mg/kg	TM224		15700	17700				13800
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.148 M	0.196 M				0.253 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CC6	3CC9	3CC9	3CC6-V	3CC9-V	3CD6
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044241	18044298	18044306	18044248	18044312	18044214
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	7.2	7.8	20	25	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	20.9 M	112 M	84.7 M	21.9 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0108 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.141			
Sulphate, Total potential	<0.06 %	TM132				0.423			
Soil Organic Matter (SOM)	<0.35 %	TM132		4.03 #	2.78 #	3.29 #	0.922 #	2.38 #	7.67 #
pH	1 pH Units	TM133		9.89 M	8.47 M	10.6 M	8.12 M	8.75 M	10.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	2.24 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.4 M	6.61 M	8.07 M	13.7 M	9.43 M	10 M
Cadmium	<0.02 mg/kg	TM181		0.411 M	0.0399 M	0.172 M	<0.02 M	<0.02 M	0.0365 M
Chromium	<0.9 mg/kg	TM181		98.1 M	144 M	39.4 M	27.7 M	35.3 M	93.2 M
Copper	<1.4 mg/kg	TM181		15.4 M	8.35 M	21.2 M	8.75 M	15.1 M	18 M
Iron	<1000 mg/kg	TM181		46000 #	47300 #	40500 #	45900 #	35700 #	69700 #
Lead	<0.7 mg/kg	TM181		60.2 M	41 M	52.2 M	23.4 M	26.4 M	64 M
Manganese	<0.13 mg/kg	TM181		5480 M	16200 M	3530 M	493 M	1010 M	6300 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		17.5 M	14.2 M	19.2 M	34.7 M	33.2 M	20.1 M
Selenium	<1 mg/kg	TM181		2.39 #	6.62 #	1.03 #	<1 #	<1 #	1.86 #
Vanadium	<0.2 mg/kg	TM181		122 #	130 #	63.5 #	48.1 #	52.8 #	154 #
Zinc	<1.9 mg/kg	TM181		220 M	172 M	218 M	86.3 M	121 M	258 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.371			
Calcium	<21 mg/kg	TM224				89200			
Magnesium	<8 mg/kg	TM224				15400			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.119 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CD6	3CD9	3CD9	3CD6-V	3CD9-V	3CE6
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.20 - 1.20	1.20 - 1.20	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044219	18044325	18044332	18044223	18044345	18044571
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	11	12	30	21	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		18.3 M	<12 M	<12 M	200 M	105 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0888 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0888 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.212		0.131			
Sulphate, Total potential	<0.06 %	TM132		0.636		0.393			
Soil Organic Matter (SOM)	<0.35 %	TM132		4.55 #	4 #	5.09 #	6.59 #	1.2 #	3.76 #
pH	1 pH Units	TM133		10.9 M	9.93 M	9.62 M	7.24 M	7.55 M	10.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.27 M	9.65 M	9.46 M	14.8 M	9.46 M	8.56 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.043 M	0.428 M	0.36 M	<0.02 M	0.426 M
Chromium	<0.9 mg/kg	TM181		207 M	104 M	62 M	37.8 M	32.2 M	107 M
Copper	<1.4 mg/kg	TM181		12.3 M	20.4 M	28.6 M	18.4 M	10.5 M	12.6 M
Iron	<1000 mg/kg	TM181		81600 #	79800 #	63100 #	30700 #	38100 #	54100 #
Lead	<0.7 mg/kg	TM181		40.5 M	89.4 M	128 M	46 M	19.6 M	84.4 M
Manganese	<0.13 mg/kg	TM181		13600 M	11500 M	4800 M	354 M	839 M	8100 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		11.7 M	19.9 M	21.3 M	26.4 M	34.1 M	14.6 M
Selenium	<1 mg/kg	TM181		4.47 #	3.49 #	1.33 #	<1 #	<1 #	3.17 #
Vanadium	<0.2 mg/kg	TM181		224 #	139 #	96.1 #	58.2 #	52.6 #	272 #
Zinc	<1.9 mg/kg	TM181		193 M	356 M	633 M	135 M	103 M	318 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.283		0.186			
Calcium	<21 mg/kg	TM224		145000		130000			
Magnesium	<8 mg/kg	TM224		17100		32300			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0978 M		0.167 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CE6	3CE9	3CE9	3CE6-V	3CE9-V	3CF6
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.10 - 1.10	1.70 - 1.70	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044578	18044361	18044369	18044210	18044375	18044533
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	8.2	12	30	26	9.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		23.6 M	<12 M	13.8 M	387 M	136 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0228 M	<0.01 M	<0.01 M	0.215 M	0.027 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0114 M	<0.01 M	<0.01 M	0.157 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.0228 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.057 M	<0.035 M	<0.035 M	0.372 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.24		0.179			
Sulphate, Total potential	<0.06 %	TM132		0.72		0.537			
Soil Organic Matter (SOM)	<0.35 %	TM132		7.67 #	2.76 #	5.31 #	5 #	3.03 #	8.93 #
pH	1 pH Units	TM133		9.88 M	10.9 M	10.7 M	8.85 M	8.92 M	10.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.27 M	9.83 M	4.74 M	12.9 M	10.2 M	5.9 M
Cadmium	<0.02 mg/kg	TM181		0.24 M	<0.02 M	<0.02 M	0.189 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		169 M	304 M	110 M	47.7 M	45.7 M	489 M
Copper	<1.4 mg/kg	TM181		9.96 M	16.2 M	10.7 M	18.3 M	10.4 M	12.2 M
Iron	<1000 mg/kg	TM181		58700 #	118000 #	36500 #	32600 #	38700 #	150000 #
Lead	<0.7 mg/kg	TM181		38.8 M	36.1 M	21.5 M	81.2 M	21.2 M	138 M
Manganese	<0.13 mg/kg	TM181		11800 M	16400 M	11100 M	776 M	3830 M	36400 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		12.9 M	13.1 M	13.7 M	25.9 M	24.6 M	8.3 M
Selenium	<1 mg/kg	TM181		4.24 #	4.98 #	4.48 #	<1 #	1.35 #	11.3 #
Vanadium	<0.2 mg/kg	TM181		204 #	417 #	313 #	63.2 #	96.2 #	1720 #
Zinc	<1.9 mg/kg	TM181		145 M	172 M	82.9 M	133 M	85.1 M	731 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.491		0.466			
Calcium	<21 mg/kg	TM224		141000		167000			
Magnesium	<8 mg/kg	TM224		17400		26700			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.201 M		0.155 M			
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		N/A					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CF6	3CF6-V	3CG6	3CG6	3CG6	3CG6-V
			Depth (m)	0.80 - 0.80	0.90 - 0.90	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044555	18044565	18044205	18044265	18044350	18044446
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	32	10	11	17	35
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	312 M	14.9 M	15.5 M	<12 M	243 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0118 M	<0.01 M	0.0222 M	0.0113 M	0.0605 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0113 M	0.0363 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.0968 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.301		0.338		0.606	
Sulphate, Total potential	<0.06 %	TM132		0.903		1.01		1.82	
Soil Organic Matter (SOM)	<0.35 %	TM132		11.8 #	5.98 #	31.9 #	4.76 #	31.4 #	4.07 #
pH	1 pH Units	TM133		10.7 M	7.69 M	11.5 M	11 M	10.8 M	8.36 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.39 M	12.9 M	7.07 M	7.07 M	2.25 M	10.3 M
Cadmium	<0.02 mg/kg	TM181		1.3 M	0.108 M	<0.02 M	<0.02 M	<0.02 M	0.136 M
Chromium	<0.9 mg/kg	TM181		84.9 M	42.4 M	275 M	314 M	85.2 M	44.4 M
Copper	<1.4 mg/kg	TM181		17.4 M	18.5 M	24.2 M	27 M	6.48 M	20.9 M
Iron	<1000 mg/kg	TM181		74100 #	32700 #	100000 #	141000 #	40400 #	32600 #
Lead	<0.7 mg/kg	TM181		238 M	37.4 M	36.8 M	24.1 M	16 M	36.8 M
Manganese	<0.13 mg/kg	TM181		7930 M	687 M	18000 M	25700 M	8550 M	393 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		17 M	26.2 M	17.6 M	14.7 M	3.66 M	30.7 M
Selenium	<1 mg/kg	TM181		2.61 #	<1 #	5.98 #	7.62 #	3.64 #	<1 #
Vanadium	<0.2 mg/kg	TM181		242 #	63.3 #	793 #	1150 #	138 #	62.2 #
Zinc	<1.9 mg/kg	TM181		1140 M	128 M	203 M	127 M	82.1 M	144 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.413		0.698		0.49	
Calcium	<21 mg/kg	TM224		117000		158000		69600	
Magnesium	<8 mg/kg	TM224		13100		9980		6500	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.203 M		0.156 M		0.472 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						N/A	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CH7	3CH8	3CH8	3CH7-V	3CH8-V	3CI7
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	0.90 - 0.90	1.10 - 1.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044382	18044402	18044415	18044389	18044421	18044508
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	12	11	29	22	8.9
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	261 M	179 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0784 M	<0.01 M	0.0112 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0112 M	<0.01 M	0.0112 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0896 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.302		0.195			
Sulphate, Total potential	<0.06 %	TM132		0.906		0.585			
Soil Organic Matter (SOM)	<0.35 %	TM132		1.27 #	12.7 #	14.7 #	4.79 #	1.9 #	12.8 #
pH	1 pH Units	TM133		11.8 M	10 M	10.4 M	7.23 M	7.63 M	9.4 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.65 M	7.92 M	7.09 M	21.2 M	13.6 M	6.89 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.722 M	0.0699 M	<0.02 M	<0.02 M	0.17 M
Chromium	<0.9 mg/kg	TM181		156 M	62.3 M	28.4 M	41.6 M	39.3 M	89.8 M
Copper	<1.4 mg/kg	TM181		33.3 M	14.1 M	13.7 M	31.9 M	17.6 M	12.6 M
Iron	<1000 mg/kg	TM181		93000 #	86400 #	65000 #	29100 #	36700 #	55000 #
Lead	<0.7 mg/kg	TM181		42.5 M	158 M	70.7 M	139 M	24.9 M	53.3 M
Manganese	<0.13 mg/kg	TM181		9880 M	7030 M	3110 M	381 M	351 M	5720 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		19.9 M	13.5 M	15.2 M	28.4 M	38.5 M	17.3 M
Selenium	<1 mg/kg	TM181		2.87 #	2.44 #	<1 #	<1 #	<1 #	2.24 #
Vanadium	<0.2 mg/kg	TM181		155 #	134 #	49.3 #	83.5 #	55.2 #	109 #
Zinc	<1.9 mg/kg	TM181		201 M	579 M	476 M	194 M	106 M	197 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.587		0.193			
Calcium	<21 mg/kg	TM224		130000		157000			
Magnesium	<8 mg/kg	TM224		19500		44000			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.102 M		0.142 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CI7	3CI8	3CI8	3CI8	3CI6-V	3CI7-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.20 - 0.20	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044517	18044432	18044440	18044457	18044548	18044525
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		2.2	15	13	15	26	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	87.2 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0115 M	0.0117 M	0.0268 M	0.0116 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0102 M	0.0117 M	0.0115 M	0.0117 M	0.0134 M	0.0116 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.356		0.248			
Sulphate, Total potential	<0.06 %	TM132		1.07		0.744			
Soil Organic Matter (SOM)	<0.35 %	TM132		2.52 #	4.52 #	9.53 #	10.9 #	4.76 #	4.97 #
pH	1 pH Units	TM133		9.13 M	8.8 M	9.68 M	10.8 M	10.3 M	8.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		5.14 M	9.73 M	8.48 M	9.84 M	9.99 M	8.02 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	0.0231 M	0.225 M	<0.02 M	0.052 M
Chromium	<0.9 mg/kg	TM181		65.1 M	32.2 M	82.3 M	121 M	91.3 M	68.6 M
Copper	<1.4 mg/kg	TM181		13 M	16.1 M	15.4 M	20 M	14.3 M	14 M
Iron	<1000 mg/kg	TM181		63900 #	54800 #	120000 #	131000 #	78400 #	41400 #
Lead	<0.7 mg/kg	TM181		46.1 M	53.4 M	129 M	180 M	30.1 M	52.2 M
Manganese	<0.13 mg/kg	TM181		6270 M	2580 M	5830 M	12200 M	4010 M	5980 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		12.2 M	19.3 M	18.2 M	17.6 M	25 M	15.4 M
Selenium	<1 mg/kg	TM181		1.89 #	<1 #	<1 #	3.31 #	1.12 #	2.56 #
Vanadium	<0.2 mg/kg	TM181		108 #	52.3 #	137 #	213 #	159 #	119 #
Zinc	<1.9 mg/kg	TM181		187 M	234 M	458 M	716 M	135 M	217 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.754		0.199			
Calcium	<21 mg/kg	TM224		131000		91600			
Magnesium	<8 mg/kg	TM224		17500		18300			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.179 M		0.176 M			
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		0.0024 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		N/A					
Asbestos Quantification - Total - %	<0.001 %	TM304		0.0024 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CI8-V	3CJ7	3CJ7	3CJ8	3CJ7-V	3CJ8-V
			Depth (m)	2.60 - 2.60	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.40 - 1.40	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044464	18044485	18044493	18044470	18044501	18044479
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		23	12	12	11	40	22
Exchangeable Ammonia as N	<12 mg/kg	TM024		156 M	<12 M	<12 M	15.1 M	209 M	104 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0114 M	<0.01 M	<0.01 M	0.0127 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.106	0.206		
Sulphate, Total potential	<0.06 %	TM132				0.318	0.618		
Soil Organic Matter (SOM)	<0.35 %	TM132		1.4 #	21 #	3.28 #	4.76 #	9.83 #	1.76 #
pH	1 pH Units	TM133		7.57 M	11.2 M	9.15 M	9.95 M	7.44 M	7.62 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		15.2 M	4.67 M	7.66 M	9.33 M	14.5 M	11.6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 M	0.211 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		35.9 M	225 M	58.3 M	150 M	42.1 M	34 M
Copper	<1.4 mg/kg	TM181		16 M	12.5 M	13.6 M	15.5 M	19.1 M	18.3 M
Iron	<1000 mg/kg	TM181		36000 #	67800 #	43000 #	150000 #	27100 #	38500 #
Lead	<0.7 mg/kg	TM181		25.5 M	22.2 M	32.1 M	137 M	41.6 M	21.1 M
Manganese	<0.13 mg/kg	TM181		382 M	13400 M	2910 M	15500 M	397 M	955 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		38.4 M	23.8 M	26.7 M	14.1 M	24.7 M	36.9 M
Selenium	<1 mg/kg	TM181		<1 #	4.76 #	<1 #	3.98 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		52.9 #	182 #	65.8 #	160 #	63.1 #	52.4 #
Zinc	<1.9 mg/kg	TM181		111 M	101 M	168 M	586 M	128 M	108 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.123	0.305		
Calcium	<21 mg/kg	TM224				64700	124000		
Magnesium	<8 mg/kg	TM224				15200	12200		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.13 M	0.153 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPJC-01	SPJC-02				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	01/08/2018	01/08/2018				
			Sample Time	00:00	00:00				
			Date Received	02/08/2018	02/08/2018				
			SDG Ref	180802-25	180802-25				
			Lab Sample No.(s)	18044254	18044261				
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	10				
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M				
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M				
Sulphur, Total	<0.02 %	TM132		0.423					
Sulphate, Total potential	<0.06 %	TM132		1.27					
Soil Organic Matter (SOM)	<0.35 %	TM132		2.19 #	2.47 #				
pH	1 pH Units	TM133		8.89 M	9.13 M				
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M				
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M				
Arsenic	<0.6 mg/kg	TM181		4.71 M	7.31 M				
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M				
Chromium	<0.9 mg/kg	TM181		174 M	113 M				
Copper	<1.4 mg/kg	TM181		9.18 M	11.5 M				
Iron	<1000 mg/kg	TM181		70700 #	75200 #				
Lead	<0.7 mg/kg	TM181		21.1 M	36.1 M				
Manganese	<0.13 mg/kg	TM181		10700 M	7870 M				
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M				
Nickel	<0.2 mg/kg	TM181		8.02 M	11.8 M				
Selenium	<1 mg/kg	TM181		4.03 #	2.29 #				
Vanadium	<0.2 mg/kg	TM181		273 #	159 #				
Zinc	<1.9 mg/kg	TM181		93.5 M	152 M				
Sulphate, acid soluble (total)	<0.02 %	TM221		0.866					
Calcium	<21 mg/kg	TM224		193000					
Magnesium	<8 mg/kg	TM224		18000					
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.407 M					

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CB6	3CB9	3CB6-V	3CB9-V	3CC6	3CC6
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.20 - 1.20	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044272	18044287	18044280	18044291	18044227	18044234
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.5	77.8	77.8	68.1	85	94.9
Acenaphthene-d10 % recovery**	%	TM218		86.5	83.3	79.1	70.8	85.5	96.8
Phenanthrene-d10 % recovery**	%	TM218		85.8	86.3	81.2	72.6	84.2	93.6
Chrysene-d12 % recovery**	%	TM218		74.7	75.8	76.7	70.8	69.4	84.8
Perylene-d12 % recovery**	%	TM218		70	69.5	81	68.1	68.9	86.6
Naphthalene	<0.009 mg/kg	TM218		0.266 M	0.397 M	<0.009 M	<0.009 M	0.0664 M	0.531 M
Acenaphthylene	<0.012 mg/kg	TM218		0.276 M	0.158 M	<0.012 M	<0.012 M	0.0268 M	0.498 M
Acenaphthene	<0.008 mg/kg	TM218		0.0337 M	0.0318 M	<0.008 M	<0.008 M	<0.008 M	0.13 M
Fluorene	<0.01 mg/kg	TM218		0.214 M	0.0923 M	<0.01 M	<0.01 M	0.0236 M	0.337 M
Phenanthrene	<0.015 mg/kg	TM218		1.55 M	0.938 M	<0.015 M	<0.015 M	0.205 M	4.41 M
Anthracene	<0.016 mg/kg	TM218		0.604 M	0.268 M	<0.016 M	<0.016 M	0.0552 M	1.72 M
Fluoranthene	<0.017 mg/kg	TM218		3.16 M	1.74 M	<0.017 M	<0.017 M	0.358 M	7.76 M
Pyrene	<0.015 mg/kg	TM218		2.29 M	1.4 M	<0.015 M	<0.015 M	0.269 M	6.06 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.61 M	0.94 M	<0.014 M	<0.014 M	0.199 M	3.71 M
Chrysene	<0.01 mg/kg	TM218		1.34 M	0.77 M	<0.01 M	<0.01 M	0.228 M	2.93 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.1 M	1.33 M	<0.015 M	<0.015 M	0.343 M	3.68 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.726 M	0.406 M	<0.014 M	<0.014 M	0.109 M	1.49 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.36 M	0.754 M	<0.015 M	<0.015 M	0.168 M	3.08 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.752 M	0.422 M	<0.018 M	<0.018 M	0.121 M	2.3 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.201 M	0.124 M	<0.023 M	<0.023 M	0.0394 M	0.55 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.814 M	0.516 M	<0.024 M	<0.024 M	0.153 M	2.15 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		17.3	10.3	<0.118	<0.118	2.36	41.3

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CC6	3CC9	3CC9	3CC6-V	3CC9-V	3CD6
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044241	18044298	18044306	18044248	18044312	18044214
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.3	97.8	479	95	89.3	83.6
Acenaphthene-d10 % recovery**	%	TM218		87.3	97.8	490	95.7	83	86.3
Phenanthrene-d10 % recovery**	%	TM218		85.2	96.1	482	93.9	89.4	89.8
Chrysene-d12 % recovery**	%	TM218		81.2	91.7	437	89.3	84.8	75.1
Perylene-d12 % recovery**	%	TM218		72.6	91.7	462	88.6	80	73.5
Naphthalene	<0.009 mg/kg	TM218		0.18 M	0.152 M	2.79 M	<0.009 M	0.0132 M	0.842 M
Acenaphthylene	<0.012 mg/kg	TM218		0.159 M	0.111 M	4.83 M	<0.012 M	<0.012 M	0.397 M
Acenaphthene	<0.008 mg/kg	TM218		0.0145 M	0.00961 M	0.215 M	<0.008 M	<0.008 M	0.0914 M
Fluorene	<0.01 mg/kg	TM218		0.0881 M	0.0484 M	1.78 M	<0.01 M	<0.01 M	0.548 M
Phenanthrene	<0.015 mg/kg	TM218		0.933 M	0.407 M	14.5 M	<0.015 M	0.0624 M	2.69 M
Anthracene	<0.016 mg/kg	TM218		0.351 M	0.153 M	5.87 M	<0.016 M	<0.016 M	1.73 M
Fluoranthene	<0.017 mg/kg	TM218		2.35 M	0.942 M	46.4 M	0.0277 M	0.151 M	4.14 M
Pyrene	<0.015 mg/kg	TM218		1.73 M	0.727 M	35.4 M	0.0206 M	0.133 M	3.05 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.13 M	0.501 M	23.8 M	<0.014 M	0.0402 M	1.98 M
Chrysene	<0.01 mg/kg	TM218		1.29 M	0.508 M	19.6 M	<0.01 M	0.0516 M	1.99 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.62 M	0.711 M	32.2 M	<0.015 M	0.0532 M	2.75 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.626 M	0.224 M	10.8 M	<0.014 M	<0.014 M	1.04 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.964 M	0.526 M	22.6 M	<0.015 M	0.0282 M	1.55 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.65 M	0.481 M	19 M	<0.018 M	<0.018 M	0.842 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.153 M	0.115 M	4.59 M	<0.023 M	<0.023 M	0.287 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.621 M	0.472 M	16.7 M	<0.024 M	<0.024 M	0.988 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		12.9	6.09	261	<0.118	0.532	24.9

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CD6	3CD9	3CD9	3CD6-V	3CD9-V	3CE6
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.20 - 1.20	1.20 - 1.20	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044219	18044325	18044332	18044223	18044345	18044571
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		80.4	82.7	80.8	74.4	91.5	89.4
Acenaphthene-d10 % recovery**	%	TM218		83.1	89.6	87.3	80.9	90.2	91.9
Phenanthrene-d10 % recovery**	%	TM218		83.4	90.8	87.5	83.4	97.3	108
Chrysene-d12 % recovery**	%	TM218		73.9	83.6	78.1	82.4	93.4	103
Perylene-d12 % recovery**	%	TM218		69	78.1	73	82.1	81.6	102
Naphthalene	<0.009 mg/kg	TM218		0.287 M	0.0898 M	0.244 M	<0.009 M	<0.009 M	1.04 M
Acenaphthylene	<0.012 mg/kg	TM218		0.199 M	0.0404 M	1.02 M	<0.012 M	<0.012 M	0.607 M
Acenaphthene	<0.008 mg/kg	TM218		0.0378 M	0.00909 M	0.0366 M	<0.008 M	<0.008 M	0.0389 M
Fluorene	<0.01 mg/kg	TM218		0.203 M	0.0292 M	1.26 M	<0.01 M	<0.01 M	0.431 M
Phenanthrene	<0.015 mg/kg	TM218		1.42 M	0.241 M	12.3 M	<0.015 M	<0.015 M	3.53 M
Anthracene	<0.016 mg/kg	TM218		0.566 M	0.0653 M	3.82 M	<0.016 M	<0.016 M	1.18 M
Fluoranthene	<0.017 mg/kg	TM218		2.49 M	0.482 M	16.6 M	0.0349 M	0.0215 M	7.03 M
Pyrene	<0.015 mg/kg	TM218		1.89 M	0.385 M	11.3 M	0.0284 M	<0.015 M	5.05 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.43 M	0.282 M	5.95 M	<0.014 M	<0.014 M	2.84 M
Chrysene	<0.01 mg/kg	TM218		1.16 M	0.22 M	4.89 M	0.0191 M	<0.01 M	2.64 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.95 M	0.445 M	6.19 M	0.0261 M	<0.015 M	3.81 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.63 M	0.149 M	2.42 M	<0.014 M	<0.014 M	1.07 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.15 M	0.237 M	4.13 M	<0.015 M	<0.015 M	2.14 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.652 M	0.144 M	2.37 M	<0.018 M	<0.018 M	1.5 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.188 M	0.0411 M	0.676 M	<0.023 M	<0.023 M	0.392 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.756 M	0.166 M	2.78 M	<0.024 M	<0.024 M	1.4 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		15	3.02	75.9	<0.118	<0.118	34.7

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CE6	3CE9	3CE9	3CE6-V	3CE9-V	3CF6
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.10 - 1.10	1.70 - 1.70	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044578	18044361	18044369	18044210	18044375	18044533
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		77.3	86.4	95.6	101	102	87.7
Acenaphthene-d10 % recovery**	%	TM218		81.5	88.7	101	103	105	81.1
Phenanthrene-d10 % recovery**	%	TM218		85.3	84.4	102	99.9	101	86.5
Chrysene-d12 % recovery**	%	TM218		75.7	74.5	95	97	101	76.6
Perylene-d12 % recovery**	%	TM218		70.9	72.4	95.5	99.1	104	76.8
Naphthalene	<0.009 mg/kg	TM218		0.549 M	0.107 M	0.601 M	0.0181 M	0.176 M	1.32 M
Acenaphthylene	<0.012 mg/kg	TM218		0.408 M	0.0581 M	0.292 M	<0.012 M	<0.012 M	0.636 M
Acenaphthene	<0.008 mg/kg	TM218		0.0708 M	0.0218 M	0.0551 M	<0.008 M	0.13 M	0.0989 M
Fluorene	<0.01 mg/kg	TM218		0.522 M	0.0498 M	0.21 M	<0.01 M	0.0959 M	0.579 M
Phenanthrene	<0.015 mg/kg	TM218		3.26 M	0.397 M	1.81 M	0.0632 M	0.337 M	3.47 M
Anthracene	<0.016 mg/kg	TM218		2.03 M	0.118 M	0.58 M	<0.016 M	0.0686 M	2.37 M
Fluoranthene	<0.017 mg/kg	TM218		6.62 M	0.871 M	3.81 M	0.192 M	0.28 M	6.53 M
Pyrene	<0.015 mg/kg	TM218		4.47 M	0.705 M	2.89 M	0.129 M	0.224 M	4.67 M
Benz(a)anthracene	<0.014 mg/kg	TM218		3.49 M	0.424 M	1.8 M	0.0749 M	0.0769 M	2.62 M
Chrysene	<0.01 mg/kg	TM218		2.8 M	0.452 M	1.61 M	0.0884 M	0.0861 M	2.59 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		4 M	0.722 M	2.59 M	0.0674 M	0.0664 M	1.91 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.42 M	0.219 M	0.902 M	0.0247 M	0.0371 M	1.15 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		2.38 M	0.349 M	1.67 M	0.0638 M	0.0781 M	2.24 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.29 M	0.242 M	1.34 M	0.0445 M	0.0669 M	1.77 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.403 M	0.0777 M	0.309 M	<0.023 M	<0.023 M	0.447 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.49 M	0.312 M	1.23 M	0.0481 M	0.0698 M	1.64 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		35.2	5.13	21.7	0.814	1.79	34

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CF6	3CF6-V	3CG6	3CG6	3CG6	3CG6-V
			Depth (m)	0.80 - 0.80	0.90 - 0.90	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044555	18044565	18044205	18044265	18044350	18044446
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92	87.6	80.3	94.6	89.9	97.2
Acenaphthene-d10 % recovery**	%	TM218		98	94.2	86.4	88.7	88.9	99.8
Phenanthrene-d10 % recovery**	%	TM218		108	94.3	87.3	93.4	89.3	97.5
Chrysene-d12 % recovery**	%	TM218		97.5	91.3	79.6	79.2	77.8	95.1
Perylene-d12 % recovery**	%	TM218		93.7	92.3	76.9	80.3	80.9	96.2
Naphthalene	<0.009 mg/kg	TM218		1.29 M	0.422 M	0.884 M	1.02 M	2.51 M	0.0488 M
Acenaphthylene	<0.012 mg/kg	TM218		0.807 M	<0.012 M	1.01 M	1.64 M	3.8 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.239 M	<0.008 M	0.12 M	0.125 M	0.261 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.681 M	<0.01 M	0.917 M	0.826 M	2.89 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		3.97 M	0.0407 M	8.99 M	6.26 M	20.9 M	0.0709 M
Anthracene	<0.016 mg/kg	TM218		1.53 M	<0.016 M	2.72 M	3.53 M	8.43 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		8.24 M	0.0518 M	18.1 M	20.8 M	47.7 M	0.1 M
Pyrene	<0.015 mg/kg	TM218		6.23 M	0.0414 M	12.7 M	15.1 M	32.1 M	0.0747 M
Benz(a)anthracene	<0.014 mg/kg	TM218		3.66 M	<0.014 M	7.69 M	9.93 M	19.5 M	0.0301 M
Chrysene	<0.01 mg/kg	TM218		3.73 M	0.0219 M	6.38 M	8.59 M	17.2 M	0.0294 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		5.2 M	0.0243 M	9.13 M	11.9 M	24.6 M	0.0342 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.69 M	<0.014 M	3.55 M	4.2 M	7.94 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		3.12 M	0.0224 M	6.01 M	8.39 M	16.2 M	0.0266 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		2.49 M	<0.018 M	3.75 M	6.82 M	12.8 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.569 M	<0.023 M	1.11 M	1.7 M	3.1 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.09 M	<0.024 M	4.4 M	6.17 M	11.5 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		45.5	0.624	87.5	107	232	0.415

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CH7	3CH8	3CH8	3CH7-V	3CH8-V	3CI7
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	0.90 - 0.90	1.10 - 1.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044382	18044402	18044415	18044389	18044421	18044508
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		84.5	84.5	78	82.3	92.7	89.5
Acenaphthene-d10 % recovery**	%	TM218		87.6	84.3	81.8	86	101	89.6
Phenanthrene-d10 % recovery**	%	TM218		83.2	85.1	84.6	88.1	103	90.9
Chrysene-d12 % recovery**	%	TM218		75.8	79.2	70.6	77.6	100	79.7
Perylene-d12 % recovery**	%	TM218		74.1	82.1	71.8	82.4	95.1	75.4
Naphthalene	<0.009 mg/kg	TM218		0.109 M	1.06 M	1.4 M	<0.009 M	<0.009 M	0.497 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0447 M	1.09 M	0.73 M	<0.012 M	<0.012 M	0.398 M
Acenaphthene	<0.008 mg/kg	TM218		0.0236 M	0.0979 M	0.087 M	<0.008 M	<0.008 M	0.0814 M
Fluorene	<0.01 mg/kg	TM218		0.0329 M	0.608 M	0.504 M	<0.01 M	<0.01 M	0.45 M
Phenanthrene	<0.015 mg/kg	TM218		0.305 M	6.57 M	3.43 M	0.0225 M	<0.015 M	2.13 M
Anthracene	<0.016 mg/kg	TM218		0.0869 M	2.47 M	1.22 M	<0.016 M	<0.016 M	0.665 M
Fluoranthene	<0.017 mg/kg	TM218		0.614 M	15.5 M	8.5 M	0.0375 M	<0.017 M	3.65 M
Pyrene	<0.015 mg/kg	TM218		0.482 M	12 M	6.32 M	0.0293 M	<0.015 M	2.7 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.33 M	7.58 M	4.02 M	<0.014 M	<0.014 M	1.7 M
Chrysene	<0.01 mg/kg	TM218		0.367 M	5.79 M	3.44 M	0.0217 M	<0.01 M	1.59 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.61 M	8.71 M	5.82 M	0.0326 M	<0.015 M	2.56 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.194 M	3.03 M	1.89 M	<0.014 M	<0.014 M	0.867 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.302 M	6.68 M	3.3 M	<0.015 M	<0.015 M	1.55 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.195 M	5.08 M	2.15 M	<0.018 M	<0.018 M	0.96 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0666 M	1.25 M	0.686 M	<0.023 M	<0.023 M	0.297 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.265 M	4.42 M	2.6 M	<0.024 M	<0.024 M	1.12 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		4.03	81.9	46.1	0.144	<0.118	21.2

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CI7	3CI8	3CI8	3CI8	3CI6-V	3CI7-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.20 - 0.20	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044517	18044432	18044440	18044457	18044548	18044525
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.4	83.3	96.3	95.8	92.2	84.1
Acenaphthene-d10 % recovery**	%	TM218		96.1	90.3	94.6	91.6	102	87.5
Phenanthrene-d10 % recovery**	%	TM218		97.5	89.2	91.8	93.3	101	89.5
Chrysene-d12 % recovery**	%	TM218		86.1	84	87.7	85.4	101	77.2
Perylene-d12 % recovery**	%	TM218		87.8	80.9	89	86.4	94.1	73
Naphthalene	<0.009 mg/kg	TM218		0.351 M	0.38 M	0.877 M	0.744 M	0.254 M	0.379 M
Acenaphthylene	<0.012 mg/kg	TM218		0.206 M	0.203 M	0.686 M	0.61 M	0.133 M	0.244 M
Acenaphthene	<0.008 mg/kg	TM218		0.0331 M	<0.04 M	0.0725 M	0.0626 M	0.0336 M	0.0424 M
Fluorene	<0.01 mg/kg	TM218		0.196 M	0.132 M	0.441 M	0.397 M	0.107 M	0.172 M
Phenanthrene	<0.015 mg/kg	TM218		1.45 M	1.15 M	3.46 M	2.44 M	0.757 M	1.26 M
Anthracene	<0.016 mg/kg	TM218		0.455 M	0.393 M	1.21 M	0.933 M	0.244 M	0.478 M
Fluoranthene	<0.017 mg/kg	TM218		2.76 M	2.66 M	7.73 M	5.78 M	1.72 M	2.66 M
Pyrene	<0.015 mg/kg	TM218		2.04 M	1.99 M	5.96 M	4.38 M	1.36 M	2.01 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.33 M	1.24 M	3.68 M	2.52 M	0.862 M	1.34 M
Chrysene	<0.01 mg/kg	TM218		1.16 M	1.32 M	3.12 M	2.25 M	0.847 M	1.34 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.92 M	2.04 M	4.56 M	3.04 M	1.35 M	2.15 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.637 M	0.705 M	1.67 M	1.24 M	0.45 M	0.683 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.08 M	1.09 M	3.52 M	2.49 M	0.768 M	1.19 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.67 M	0.687 M	2.87 M	1.9 M	0.614 M	0.794 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.201 M	0.22 M	0.688 M	0.464 M	0.142 M	0.236 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.762 M	0.838 M	2.64 M	1.84 M	0.531 M	0.935 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		15.3	15	43.2	31.1	10.2	15.9

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CI8-V	3CJ7	3CJ7	3CJ8	3CJ7-V	3CJ8-V
			Depth (m)	2.60 - 2.60	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.40 - 1.40	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044464	18044485	18044493	18044470	18044501	18044479
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		65.2	88.1	85.5	74.8	93.1	92.6
Acenaphthene-d10 % recovery**	%	TM218		71.7	96.4	85.3	78.5	95	99.5
Phenanthrene-d10 % recovery**	%	TM218		82.8	105	91.2	84.9	106	101
Chrysene-d12 % recovery**	%	TM218		84.6	95.2	80.4	73.8	102	93.7
Perylene-d12 % recovery**	%	TM218		82.3	89.3	81.3	66.5	98.6	88.4
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.445 M	0.113 M	0.642 M	0.0377 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.582 M	0.0488 M	0.545 M	0.121 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0778 M	0.0182 M	0.0702 M	0.014 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.598 M	0.0388 M	0.458 M	0.0488 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	4.56 M	0.272 M	3.41 M	0.331 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	1.48 M	0.102 M	1.43 M	0.325 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	6.34 M	0.551 M	7.14 M	1.98 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	4.71 M	0.416 M	5.28 M	1.46 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	2.6 M	0.305 M	3.54 M	0.813 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	2.76 M	0.278 M	2.85 M	0.815 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	3.88 M	0.461 M	4.86 M	1.05 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	1.55 M	0.138 M	1.49 M	0.302 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	2.27 M	0.264 M	2.83 M	0.645 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	1.94 M	0.165 M	1.68 M	0.427 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.442 M	0.0502 M	0.481 M	0.111 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	1.66 M	0.193 M	2.01 M	0.387 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	35.9	3.42	38.7	8.87	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPJC-01	SPJC-02				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	01/08/2018	01/08/2018				
			Sample Time	00:00	00:00				
			Date Received	02/08/2018	02/08/2018				
			SDG Ref	180802-25	180802-25				
			Lab Sample No.(s)	18044254	18044261				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97.6	90.7				
Acenaphthene-d10 % recovery**	%	TM218		106	87.4				
Phenanthrene-d10 % recovery**	%	TM218		111	86.5				
Chrysene-d12 % recovery**	%	TM218		105	81				
Perylene-d12 % recovery**	%	TM218		94.6	81				
Naphthalene	<0.009 mg/kg	TM218		0.204 M	0.326 M				
Acenaphthylene	<0.012 mg/kg	TM218		0.0893 M	0.11 M				
Acenaphthene	<0.008 mg/kg	TM218		0.0277 M	0.0246 M				
Fluorene	<0.01 mg/kg	TM218		0.0457 M	0.0714 M				
Phenanthrene	<0.015 mg/kg	TM218		0.477 M	0.641 M				
Anthracene	<0.016 mg/kg	TM218		0.171 M	0.214 M				
Fluoranthene	<0.017 mg/kg	TM218		1.11 M	1.3 M				
Pyrene	<0.015 mg/kg	TM218		0.957 M	1.03 M				
Benz(a)anthracene	<0.014 mg/kg	TM218		0.684 M	0.649 M				
Chrysene	<0.01 mg/kg	TM218		0.716 M	0.645 M				
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.08 M	0.788 M				
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.392 M	0.345 M				
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.7 M	0.691 M				
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.629 M	0.545 M				
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.14 M	0.121 M				
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.576 M	0.545 M				
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		8	8.05				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CB6	3CB9	3CB6-V	3CB9-V	3CC6	3CC6
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.20 - 1.20	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044272	18044287	18044280	18044291	18044227	18044234
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		83.7	61.6	99.3	82.1	70.7	71.3
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.8	3.9	<0.1	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		6.84	12.2	0.131	0.771	1.04	2.93
Aliphatics >C21-C35	<0.1 mg/kg	TM173		32.9	52.9	2.73	1.62	8.16	24.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		12.5	23.6	0.276	0.639	2.68	13.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		54	92.6	3.14	3.03	11.9	41.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.08	<0.1	<0.1	0.235	0.637	1.01
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		10.8	4.63	<0.1	0.702	3.17	9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		44.8	19	14.9	15.7	15	41.2
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		21	1.47	1.19	4.31	5.52	20.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		8.13	<0.1	<0.1	1.6	2.04	7.92
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		78.7	25.1	16.1	20.9	24.4	71.3
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		133	118	19.2	23.9	36.2	112

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CC6	3CC9	3CC9	3CC6-V	3CC9-V	3CD6
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044241	18044298	18044306	18044248	18044312	18044214
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		68.7	67.1	50.2	94.2	98.5	64.8
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	<0.1 #	<0.1 #	<0.1 M	<0.1 M	<0.1 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	0.201	2.27	0.698	1.81	4.21
Aliphatics >C16-C21	<0.1 mg/kg	TM173		2.6	2.66	13.4	8.81	32	15
Aliphatics >C21-C35	<0.1 mg/kg	TM173		24.9	23.2	61.2	52.6	23.2	42.4
Aliphatics >C35-C44	<0.1 mg/kg	TM173		13.9	7.93	21.2	16.4	5.59	11.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		41.5	34	98	78.5	62.6	73.2
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.4	0.974	4.43	2.1	1.03	3.34
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.3	6.9	55.9	22.2	10.6	18.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		42.4	47.5	180	87.5	17.5	58.4
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		21.4	18.1	58.4	30.9	5.94	25.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		8.2	6.83	20.6	11.1	2.41	10.2
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		74.5	73.4	298	143	35.1	106
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		116	107	396	221	97.7	179

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CD6	3CD9	3CD9	3CD6-V	3CD9-V	3CE6
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.20 - 1.20	1.20 - 1.20	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044219	18044325	18044332	18044223	18044345	18044571
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		65.4	85.1	79.8	85	94.6	70
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.67	1.02	1.93	<0.1	<0.1	0.868
Aliphatics >C16-C21	<0.1 mg/kg	TM173		8.47	6.25	11	0.26	0.348	8.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		34.4	28.8	63.2	3.36	1.62	37.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		11.1	9.66	19.6	0.509	<0.1	12.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		56.6	45.8	95.8	4.13	1.97	59.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.08	2.38	<0.1	0.661	<0.1	5.46
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		20	20.2	2.63	1.16	0.501	44.5
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		74.6	81.7	23.1	31.3	2.38	111
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		25.8	28.1	0.371	5.34	0.714	39.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		9.26	10.6	<0.1	1.92	0.105	13.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		123	132	26.1	38.5	3.6	201
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		180	178	122	42.6	5.57	261

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CE6	3CE9	3CE9	3CE6-V	3CE9-V	3CF6
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.10 - 1.10	1.70 - 1.70	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044578	18044361	18044369	18044210	18044375	18044533
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		73	89	72.4	83	68	75
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.6	9.01	5	0.192	0.248	1.07
Aliphatics >C16-C21	<0.1 mg/kg	TM173		27.6	22.1	16.9	0.93	3.39	8.24
Aliphatics >C21-C35	<0.1 mg/kg	TM173		73.4	96.8	121	5.2	4.33	21.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		36.4	38	88.4	0.406	3.61	5.47
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		143	166	231	6.73	11.6	36.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		55.4	1.73	3.83	0.676	0.822	2.74
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	8.35	29	2.91	2.17	24.4
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		182	52	169	24.7	6.86	56
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		85.2	32	105	4.05	5.62	16.3
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		34.6	13.6	40.5	0.945	2.71	5.57
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		322	94	307	32.3	15.5	99.5
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		465	260	538	39.1	27	136

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CF6	3CF6-V	3CG6	3CG6	3CG6	3CG6-V
			Depth (m)	0.80 - 0.80	0.90 - 0.90	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044555	18044565	18044205	18044265	18044350	18044446
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		71.6	83	72.1	61.4	79.4	89
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M	<0.1 M	<0.1 #	0.27 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0399	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0399	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0847	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		12.1	<0.1	4.41	1.04	8.15	0.995
Aliphatics >C16-C21	<0.1 mg/kg	TM173		106	0.354	15.4	8.43	40.5	0.956
Aliphatics >C21-C35	<0.1 mg/kg	TM173		97.5	3.28	51.4	46.7	74.4	3.09
Aliphatics >C35-C44	<0.1 mg/kg	TM173		31.6	<0.1	15.4	16.1	28.3	0.907
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		247	3.63	86.7	72.3	151	5.94
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0266	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0569	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		21.4	<0.1	5.97	2.95	35.9	4.09
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		224	0.816	66.4	39.1	315	6.51
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		433	21.6	183	144	959	36.4
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		124	2.64	43.5	44.6	305	4.21
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		42.1	0.566	12.6	15.1	100	0.217
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		803	25.1	299	230	1610	51.2
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1050	28.7	386	303	1770	57.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CH7	3CH8	3CH8	3CH7-V	3CH8-V	3CI7
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	0.90 - 0.90	1.10 - 1.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044382	18044402	18044415	18044389	18044421	18044508
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		94.8	43	60.6	67.7	96.9	123
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.1 #	<0.1 #	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.47	6.11	3.94	0.601	<0.1	2.41
Aliphatics >C16-C21	<0.1 mg/kg	TM173		16.2	34.1	12.9	1.06	<0.1	12.4
Aliphatics >C21-C35	<0.1 mg/kg	TM173		90.8	89.4	44.5	5.07	1.07	62.6
Aliphatics >C35-C44	<0.1 mg/kg	TM173		46.2	10.9	7.37	0.432	<0.1	22
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		157	140	68.7	7.16	1.07	99.5
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.35	14.1	92.2	0.342	0.297	2.83
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		8.45	121	536	1.98	0.915	17.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		53.4	300	803	48.9	9.89	76.9
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		32.4	82.9	215	7.32	4.61	34.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		13.4	26.5	66.8	1.77	1.9	13.2
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		95.6	518	1650	58.5	15.7	132
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		252	658	1710	65.7	16.8	232

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CI7	3CI8	3CI8	3CI8	3CI6-V	3CI7-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.20 - 0.20	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044517	18044432	18044440	18044457	18044548	18044525
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		66.2	71.5	53.6	68.9	63.3	76.1
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	<0.1 M	<0.1 #	<0.1 #	<0.1 #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.92	1.25	1.85	2.11	0.511	5.49
Aliphatics >C16-C21	<0.1 mg/kg	TM173		13.1	9.49	11.2	18.2	2	16.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		72.6	60.2	49.2	60.6	11.7	99.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		31	11.5	16.7	12.1	4.34	51.8
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		120	82.5	79	93	18.6	173
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3	2.8	9.13	7.09	0.498	3.19
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		21.9	19.3	63.8	56	4.04	21
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		90.8	87.6	152	185	21	114
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		41.5	35.9	59	58.8	7	68.3
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		16.1	14.5	21.8	19.6	2.59	28.4
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		157	146	284	307	32.6	206
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		277	228	363	400	51.1	379

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CI8-V	3CJ7	3CJ7	3CJ8	3CJ7-V	3CJ8-V
			Depth (m)	2.60 - 2.60	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.40 - 1.40	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044464	18044485	18044493	18044470	18044501	18044479
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89	37.2	70	59.2	79.3	103
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.1 M	<0.1 #	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	0.65	0.54	2	0.247	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	7.31	3.5	14.5	1.11	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1.11	33.7	24.5	52.2	11.6	0.538
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	10.5	8.77	14.2	0.795	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		1.11	52.2	37.3	83	13.7	0.538
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.286	2.36	<0.1	2.79	0.865	0.184
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.718	13.9	3.33	23.1	4.9	0.687
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		6.53	63.2	12.1	92.4	71.8	11.6
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		3.23	25.4	<0.1	32.4	14.4	7.18
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		1.22	9.1	<0.1	12	4.67	3.53
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		10.8	105	15.4	151	91.9	19.6
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		11.9	157	52.8	234	106	20.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPJC-01	SPJC-02				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	01/08/2018	01/08/2018				
			Sample Time	00:00	00:00				
			Date Received	02/08/2018	02/08/2018				
			SDG Ref	180802-25	180802-25				
			Lab Sample No.(s)	18044254	18044261				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89.8	70				
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M				
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.804	1.48				
Aliphatics >C16-C21	<0.1 mg/kg	TM173		6.68	13.8				
Aliphatics >C21-C35	<0.1 mg/kg	TM173		34.2	57.3				
Aliphatics >C35-C44	<0.1 mg/kg	TM173		12.8	29.4				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		54.4	102				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.07	1.05				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		6.39	7.61				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		38	41.6				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		22.8	35				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		9.65	16.2				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		68.2	85.3				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		123	187				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CB6	3CB9	3CB6-V	3CB9-V	3CC6	3CC6
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.20 - 1.20	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044272	18044287	18044280	18044291	18044227	18044234
			AGS Reference						
Dibromofluoromethane**	%	TM116		102	102	105	106	103	99
Toluene-d8**	%	TM116		97.5	98.7	100	96.5	97.3	96.6
4-Bromofluorobenzene**	%	TM116		89.9	96.8	103	93.5	89.8	89.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CC6	3CC9	3CC9	3CC6-V	3CC9-V	3CD6
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044241	18044298	18044306	18044248	18044312	18044214
			AGS Reference						
Dibromofluoromethane**	%	TM116		101	103	98.2	106	105	103
Toluene-d8**	%	TM116		97.2	96.6	96.4	99.3	97.7	97.3
4-Bromofluorobenzene**	%	TM116		88.7	93.8	86.3	96	93.1	89.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	0.151 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CD6	3CD9	3CD9	3CD6-V	3CD9-V	3CE6
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.20 - 1.20	1.20 - 1.20	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044219	18044325	18044332	18044223	18044345	18044571
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.1	105	104	111	105	102
Toluene-d8**	%	TM116		94.9	97	99.5	98.9	98.8	98.3
4-Bromofluorobenzene**	%	TM116		86.9	89.5	95.3	97.1	95.6	91.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	0.199 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CE6	3CE9	3CE9	3CE6-V	3CE9-V	3CF6
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.10 - 1.10	1.70 - 1.70	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044578	18044361	18044369	18044210	18044375	18044533
			AGS Reference						
Dibromofluoromethane**	%	TM116		100	109	101	104	106	103
Toluene-d8**	%	TM116		97.7	98.1	99.3	98.4	99.5	98.8
4-Bromofluorobenzene**	%	TM116		88.4	91.1	93.2	93.2	92.8	91.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.185 M	<0.13 M	0.18 M	0.679 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CF6	3CF6-V	3CG6	3CG6	3CG6	3CG6-V
			Depth (m)	0.80 - 0.80	0.90 - 0.90	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044555	18044565	18044205	18044265	18044350	18044446
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.6	101	104	102	95.1	102
Toluene-d8**	%	TM116		96.3	99.3	95.7	98.2	94.2	99.8
4-Bromofluorobenzene**	%	TM116		88.5	94.3	85.7	91.7	79.9	96.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.491 M	<0.13 M	0.994 M	<0.13 M	2.65 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CH7	3CH8	3CH8	3CH7-V	3CH8-V	3CI7
			Depth (m)	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	0.90 - 0.90	1.10 - 1.10	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044382	18044402	18044415	18044389	18044421	18044508
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	105	97.9	123	104	102
Toluene-d8**	%	TM116		99.8	96.8	97.1	98.7	101	96.7
4-Bromofluorobenzene**	%	TM116		101	86.7	90.8	96	103	89.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.232 M	0.37 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CI7	3CI8	3CI8	3CI8	3CI6-V	3CI7-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.20 - 0.20	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044517	18044432	18044440	18044457	18044548	18044525
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	109	95.2	103	101	102
Toluene-d8**	%	TM116		98.1	98.4	95.2	96.4	96.9	99
4-Bromofluorobenzene**	%	TM116		90.8	86.7	80.4	85.3	92	93
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	0.213 M	0.195 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CI8-V	3CJ7	3CJ7	3CJ8	3CJ7-V	3CJ8-V
			Depth (m)	2.60 - 2.60	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.40 - 1.40	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018	01/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018	02/08/2018
			SDG Ref	180802-25	180802-25	180802-25	180802-25	180802-25	180802-25
			Lab Sample No.(s)	18044464	18044485	18044493	18044470	18044501	18044479
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	95	100	97	110	100
Toluene-d8**	%	TM116		99.8	93.8	98.2	95.8	96.4	98.8
4-Bromofluorobenzene**	%	TM116		97.8	75.1	91	84.5	90.5	96.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	0.205 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SPJC-01	SPJC-02				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	01/08/2018	01/08/2018				
			Sample Time	00:00	00:00				
			Date Received	02/08/2018	02/08/2018				
			SDG Ref	180802-25	180802-25				
			Lab Sample No.(s)	18044254	18044261				
			AGS Reference						
Dibromofluoromethane**	%	TM116		102	103				
Toluene-d8**	%	TM116		96.3	97.4				
4-Bromofluorobenzene**	%	TM116		91.8	89.8				
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M				
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M				
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M				
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #				
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M				
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4				

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CB6 0.50 - 0.50 SOLID 01/08/2018 00:00:00 02/08/2018 13:37:01 180802-25 18044272 TM048	03/08/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CB9 0.50 - 0.50 SOLID 01/08/2018 00:00:00 02/08/2018 13:48:44 180802-25 18044287 TM048	03/08/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CC6 1.00 - 1.00 SOLID 01/08/2018 00:00:00 02/08/2018 12:56:33 180802-25 18044234 TM048	03/08/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CC9 1.00 - 1.00 SOLID 01/08/2018 00:00:00 02/08/2018 13:50:14 180802-25 18044306 TM048	03/08/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CD6 1.00 - 1.00 SOLID 01/08/2018 00:00:00 02/08/2018 14:24:46 180802-25 18044219 TM048	03/08/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CD9 1.00 - 1.00 SOLID 01/08/2018 00:00:00 02/08/2018 18:58:30 180802-25 18044332 TM048	08/08/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180802-25 **Client Reference:** **Report Number:** 468218
Location: Llanwern **Order Number:** LLA468 **Superseded Report:** 468217

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CE6 1.00 - 1.00 SOLID 01/08/2018 00:00:00 02/08/2018 19:06:08 180802-25 18044578 TM048	08/08/2018	Lucy Caroe	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CE9 1.00 - 1.00 SOLID 01/08/2018 00:00:00 02/08/2018 15:55:51 180802-25 18044369 TM048	07/08/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CF6 0.80 - 0.80 SOLID 01/08/2018 00:00:00 02/08/2018 16:03:33 180802-25 18044555 TM048	03/08/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CG6 0.50 - 0.50 SOLID 01/08/2018 00:00:00 02/08/2018 16:05:18 180802-25 18044205 TM048	06/08/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Trace
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CG6 1.50 - 1.50 SOLID 01/08/2018 00:00:00 02/08/2018 12:40:43 180802-25 18044350 TM048	07/08/2018	Renata Bozhkov	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CH7 0.50 - 0.50 SOLID 01/08/2018 00:00:00 02/08/2018 15:45:45 180802-25 18044382 TM048	07/08/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180802-25 **Client Reference:** **Report Number:** 468218
Location: Llanwern **Order Number:** LLA468 **Superseded Report:** 468217

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CH8 1.00 - 1.00 SOLID 01/08/2018 00:00:00 02/08/2018 15:43:15 180802-25 18044415 TM048	07/08/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CI7 1.00 - 1.00 SOLID 01/08/2018 00:00:00 02/08/2018 19:03:42 180802-25 18044517 TM048	03/08/2018	Lucy Caroe	Soil containing ACM debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CI8 1.00 - 1.00 SOLID 01/08/2018 00:00:00 02/08/2018 15:53:25 180802-25 18044440 TM048	07/08/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CJ7 1.00 - 1.00 SOLID 01/08/2018 00:00:00 02/08/2018 15:06:24 180802-25 18044493 TM048	07/08/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CJ8 0.50 - 0.50 SOLID 01/08/2018 00:00:00 02/08/2018 15:56:13 180802-25 18044470 TM048	07/08/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	SPJC-01 0.00 - 0.00 SOLID 01/08/2018 00:00:00 02/08/2018 13:05:39 180802-25 18044254 TM048	03/08/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CE6 1.00 - 1.00 SOLID 01/08/2018 00:00:00 02/08/2018 19:07:03 180802-25 18044578 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CG6 1.50 - 1.50 SOLID 01/08/2018 00:00:00 02/08/2018 12:41:35 180802-25 18044350 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CI7 1.00 - 1.00 SOLID 01/08/2018 00:00:00 02/08/2018 19:04:36 180802-25 18044517 TM304	None (#)	N/A	0.0024 (#)	<0.001 (#)	0.0024 (#)

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044205
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CG6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.701	<0.2	7.01	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00302	<0.0005	0.0302	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00129	<0.001	0.0129	<0.01	-	-	-
Copper	0.00418	<0.0003	0.0418	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00167	<0.0004	0.0167	<0.004	-	-	-
Selenium	0.00589	<0.001	0.0589	<0.01	-	-	-
Vanadium	0.342	<0.001	3.42	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000162	<0.00001	0.00162	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000982	<0.000005	0.000982	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00029	<0.000005	0.0029	<0.00005	-	-	-
Fluoranthene by GCMS	0.00131	<0.000005	0.0131	<0.00005	-	-	-
Anthracene by GCMS	0.00027	<0.000005	0.0027	<0.00005	-	-	-
Phenanthrene by GCMS	0.000959	<0.000005	0.00959	<0.00005	-	-	-
Fluorene by GCMS	0.000322	<0.000005	0.00322	<0.00005	-	-	-
Chrysene by GCMS	0.0000784	<0.000005	0.000784	<0.00005	-	-	-
Pyrene by GCMS	0.000849	<0.000005	0.00849	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000078	<0.000005	0.00078	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000762	<0.000005	0.000762	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000329	<0.000005	0.000329	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000362	<0.000002	0.000362	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000301	<0.000005	0.000301	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00462	<0.000082	0.0462	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.48
Conductivity (µS/cm)	345.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

13/08/2018 17:18:15

17:17:44 13/08/2018

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044205
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CG6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.48
Conductivity (µS/cm)	345.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

13/08/2018 17:18:15

17:17:44 13/08/2018

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044214
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CD6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0094	<0.0005	0.094	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00304	<0.0003	0.0304	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00117	<0.0004	0.0117	<0.004	-	-	-
Selenium	0.00319	<0.001	0.0319	<0.01	-	-	-
Vanadium	0.132	<0.001	1.32	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000508	<0.00001	0.000508	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000136	<0.000005	0.000136	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000281	<0.000005	0.000281	<0.00005	-	-	-
Fluoranthene by GCMS	0.000275	<0.000005	0.00275	<0.00005	-	-	-
Anthracene by GCMS	0.000055	<0.000005	0.00055	<0.00005	-	-	-
Phenanthrene by GCMS	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Fluorene by GCMS	0.0000301	<0.000005	0.000301	<0.00005	-	-	-
Chrysene by GCMS	0.0000898	<0.000005	0.000898	<0.00005	-	-	-
Pyrene by GCMS	0.000207	<0.000005	0.00207	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000883	<0.000005	0.000883	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000163	<0.000005	0.00163	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000568	<0.000005	0.000568	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000816	<0.000002	0.000816	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000201	<0.000005	0.000201	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000624	<0.000005	0.000624	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000573	<0.000005	0.000573	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00142	<0.000082	0.0142	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.69
Conductivity (µS/cm)	219.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044214
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CD6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.69
Conductivity (µS/cm)	219.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044219
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CD6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.05	<0.2	10.5	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00542	<0.0005	0.0542	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0124	<0.0003	0.124	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00271	<0.0004	0.0271	<0.004	-	-	-
Selenium	0.00639	<0.001	0.0639	<0.01	-	-	-
Vanadium	0.349	<0.001	3.49	<0.01	-	-	-
Zinc	0.0015	<0.001	0.015	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000983	<0.00001	0.000983	<0.0001	-	-	-
Acenaphthene by GCMS	0.000032	<0.000005	0.00032	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000158	<0.000005	0.00158	<0.00005	-	-	-
Fluoranthene by GCMS	0.000347	<0.000005	0.00347	<0.00005	-	-	-
Anthracene by GCMS	0.0000725	<0.000005	0.000725	<0.00005	-	-	-
Phenanthrene by GCMS	0.000384	<0.000005	0.00384	<0.00005	-	-	-
Fluorene by GCMS	0.000107	<0.000005	0.00107	<0.00005	-	-	-
Chrysene by GCMS	0.0000692	<0.000005	0.000692	<0.00005	-	-	-
Pyrene by GCMS	0.000254	<0.000005	0.00254	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000715	<0.000005	0.000715	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000942	<0.000005	0.000942	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000442	<0.000005	0.000442	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000473	<0.000002	0.000473	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000255	<0.000005	0.000255	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000368	<0.000005	0.000368	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00185	<0.000082	0.0185	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.70
Conductivity (µS/cm)	303.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044219
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CD6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.70
Conductivity (µS/cm)	303.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044227
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CC6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00454	<0.0005	0.0454	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000514	<0.0004	0.00514	<0.004	-	-	-
Selenium	0.00326	<0.001	0.0326	<0.01	-	-	-
Vanadium	0.0123	<0.001	0.123	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000293	<0.000005	0.000293	<0.00005	-	-	-
Anthracene by GCMS	0.00000712	<0.000005	0.0000712	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000195	<0.000005	0.000195	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000147	<0.000005	0.000147	<0.00005	-	-	-
Pyrene by GCMS	0.0000209	<0.000005	0.000209	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000192	<0.000005	0.000192	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000218	<0.000005	0.000218	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000794	<0.000005	0.0000794	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000117	<0.000002	0.000117	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000755	<0.000005	0.0000755	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000171	<0.000082	0.00171	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	8.68
Conductivity (µS/cm)	189.00
Temperature (°C)	23.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044227
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CC6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	8.68
Conductivity (µS/cm)	189.00
Temperature (°C)	23.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044234
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CC6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00491	<0.0005	0.0491	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0114	<0.0003	0.114	<0.003	-	-	-
Lead	0.000239	<0.0002	0.00239	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00125	<0.0004	0.0125	<0.004	-	-	-
Selenium	0.00452	<0.001	0.0452	<0.01	-	-	-
Vanadium	0.206	<0.001	2.06	<0.01	-	-	-
Zinc	0.0015	<0.001	0.015	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000611	<0.00001	0.000611	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000387	<0.000005	0.000387	<0.00005	-	-	-
Fluoranthene by GCMS	0.000254	<0.000005	0.00254	<0.00005	-	-	-
Anthracene by GCMS	0.0000472	<0.000005	0.000472	<0.00005	-	-	-
Phenanthrene by GCMS	0.000155	<0.000005	0.00155	<0.00005	-	-	-
Fluorene by GCMS	0.0000287	<0.000005	0.000287	<0.00005	-	-	-
Chrysene by GCMS	0.0000473	<0.000005	0.000473	<0.00005	-	-	-
Pyrene by GCMS	0.000217	<0.000005	0.00217	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000405	<0.000005	0.000405	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000642	<0.000005	0.000642	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000244	<0.000005	0.000244	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000305	<0.000002	0.000305	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000599	<0.000005	0.0000599	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000193	<0.000005	0.000193	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00107	<0.000082	0.0107	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	329.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044234
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CC6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	329.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044241
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CC6
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0102	<0.0005	0.102	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000781	<0.0004	0.00781	<0.004	-	-	-
Selenium	0.00398	<0.001	0.0398	<0.01	-	-	-
Vanadium	0.0785	<0.001	0.785	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000239	<0.00001	0.000239	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000517	<0.000005	0.0000517	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000073	<0.000005	0.000073	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000728	<0.000005	0.000728	<0.00005	-	-	-
Anthracene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000374	<0.000005	0.000374	<0.00005	-	-	-
Fluorene by GCMS	0.00000762	<0.000005	0.0000762	<0.00005	-	-	-
Chrysene by GCMS	0.0000302	<0.000005	0.000302	<0.00005	-	-	-
Pyrene by GCMS	0.0000597	<0.000005	0.000597	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000267	<0.000005	0.000267	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000047	<0.000005	0.00047	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000256	<0.000002	0.000256	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000536	<0.000005	0.0000536	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000418	<0.000082	0.00418	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.39
Conductivity (µS/cm)	196.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044241
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CC6
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.39
Conductivity (µS/cm)	196.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044254
Sampled Date	01-Aug-2018
Customer Sample Ref.	SPJC-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00781	<0.0005	0.0781	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000978	<0.0003	0.00978	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00076	<0.0004	0.0076	<0.004	-	-	-
Selenium	0.00569	<0.001	0.0569	<0.01	-	-	-
Vanadium	0.0641	<0.001	0.641	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Acenaphthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Fluoranthene by GCMS	0.0000285	<0.00001	0.000285	<0.0001	-	-	-
Anthracene by GCMS	0.0000106	<0.00001	0.000106	<0.0001	-	-	-
Phenanthrene by GCMS	0.0000197	<0.00001	0.000197	<0.0001	-	-	-
Fluorene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Chrysene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Pyrene by GCMS	0.0000229	<0.00001	0.000229	<0.0001	-	-	-
Benz(a)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000148	<0.00001	0.000148	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	0.0000146	<0.000004	0.000146	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PAH 16 EPA Total by GCMS	<0.000164	<0.000164	<0.00164	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	8.99
Conductivity (µS/cm)	224.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044254
Sampled Date	01-Aug-2018
Customer Sample Ref.	SPJC-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	8.99
Conductivity (µS/cm)	224.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044261
Sampled Date	01-Aug-2018
Customer Sample Ref.	SPJC-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0103	<0.0005	0.103	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00366	<0.0003	0.0366	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00122	<0.0004	0.0122	<0.004	-	-	-
Selenium	0.00437	<0.001	0.0437	<0.01	-	-	-
Vanadium	0.0735	<0.001	0.735	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000017	<0.00001	0.00017	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000361	<0.000005	0.000361	<0.00005	-	-	-
Anthracene by GCMS	0.00000963	<0.000005	0.0000963	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Pyrene by GCMS	0.0000292	<0.000005	0.000292	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000111	<0.000005	0.000111	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000115	<0.000002	0.000115	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000997	<0.000005	0.0000997	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000184	<0.000082	0.00184	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.50
Conductivity (µS/cm)	225.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044261
Sampled Date	01-Aug-2018
Customer Sample Ref.	SPJC-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.50
Conductivity (µS/cm)	225.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044265
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CG6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.86	<0.2	8.6	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00363	<0.0005	0.0363	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00151	<0.001	0.0151	<0.01	-	-	-
Copper	0.00801	<0.0003	0.0801	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00261	<0.0004	0.0261	<0.004	-	-	-
Selenium	0.00666	<0.001	0.0666	<0.01	-	-	-
Vanadium	0.412	<0.001	4.12	<0.01	-	-	-
Zinc	0.00762	<0.001	0.0762	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000678	<0.00001	0.000678	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000384	<0.000005	0.000384	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Fluoranthene by GCMS	0.000889	<0.000005	0.00889	<0.00005	-	-	-
Anthracene by GCMS	0.000152	<0.000005	0.00152	<0.00005	-	-	-
Phenanthrene by GCMS	0.000525	<0.000005	0.00525	<0.00005	-	-	-
Fluorene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Chrysene by GCMS	0.0000575	<0.000005	0.000575	<0.00005	-	-	-
Pyrene by GCMS	0.000607	<0.000005	0.00607	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000377	<0.000005	0.000377	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000519	<0.000005	0.000519	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000241	<0.000005	0.000241	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000254	<0.000002	0.000254	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000657	<0.000005	0.0000657	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000265	<0.000005	0.000265	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000215	<0.000005	0.000215	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00277	<0.000082	0.0277	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	392.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044265
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CG6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	392.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044272
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CB6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.243	<0.2	2.43	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00825	<0.0005	0.0825	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00285	<0.0003	0.0285	<0.003	-	-	-
Lead	0.000236	<0.0002	0.00236	<0.002	-	-	-
Manganese	0.00356	<0.003	0.0356	<0.03	-	-	-
Nickel	0.00109	<0.0004	0.0109	<0.004	-	-	-
Selenium	0.00577	<0.001	0.0577	<0.01	-	-	-
Vanadium	0.114	<0.001	1.14	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000222	<0.00001	0.000222	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000868	<0.000005	0.0000868	<0.00005	-	-	-
Fluoranthene by GCMS	0.000043	<0.000005	0.00043	<0.00005	-	-	-
Anthracene by GCMS	0.00000795	<0.000005	0.0000795	<0.00005	-	-	-
Phenanthrene by GCMS	0.000037	<0.000005	0.00037	<0.00005	-	-	-
Fluorene by GCMS	0.00000844	<0.000005	0.0000844	<0.00005	-	-	-
Chrysene by GCMS	0.00000822	<0.000005	0.0000822	<0.00005	-	-	-
Pyrene by GCMS	0.0000323	<0.000005	0.000323	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000711	<0.000005	0.0000711	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000107	<0.000002	0.000107	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000201	<0.000082	0.00201	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.76
Conductivity (µS/cm)	172.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044272
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CB6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.76
Conductivity (µS/cm)	172.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044287
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CB9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00241	<0.0005	0.0241	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00162	<0.001	0.0162	<0.01	-	-	-
Copper	0.00437	<0.0003	0.0437	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000743	<0.0004	0.00743	<0.004	-	-	-
Selenium	0.00262	<0.001	0.0262	<0.01	-	-	-
Vanadium	0.115	<0.001	1.15	<0.01	-	-	-
Zinc	0.00109	<0.001	0.0109	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000382	<0.00001	0.000382	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000123	<0.000005	0.000123	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000794	<0.000005	0.000794	<0.00005	-	-	-
Anthracene by GCMS	0.0000163	<0.000005	0.000163	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000448	<0.000005	0.000448	<0.00005	-	-	-
Fluorene by GCMS	0.0000078	<0.000005	0.000078	<0.00005	-	-	-
Chrysene by GCMS	0.00000532	<0.000005	0.0000532	<0.00005	-	-	-
Pyrene by GCMS	0.0000854	<0.000005	0.000854	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000788	<0.000005	0.0000788	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000313	<0.000082	0.00313	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	511.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044287
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CB9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	511.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044298
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CC9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00464	<0.0005	0.0464	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00374	<0.0003	0.0374	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00148	<0.0004	0.0148	<0.004	-	-	-
Selenium	0.00134	<0.001	0.0134	<0.01	-	-	-
Vanadium	0.0121	<0.001	0.121	<0.01	-	-	-
Zinc	0.00268	<0.001	0.0268	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000162	<0.00001	0.000162	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Anthracene by GCMS	0.00000866	<0.000005	0.0000866	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000162	<0.000005	0.000162	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.00000644	<0.000005	0.0000644	<0.00005	-	-	-
Pyrene by GCMS	0.0000162	<0.000005	0.000162	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000704	<0.000005	0.0000704	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000697	<0.000002	0.0000697	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000575	<0.000005	0.0000575	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000073	<0.000005	0.000073	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000128	<0.000082	0.00128	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	8.84
Conductivity (µS/cm)	173.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044298
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CC9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	8.84
Conductivity (µS/cm)	173.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044306
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CC9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00451	<0.0005	0.0451	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00559	<0.0003	0.0559	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000922	<0.0004	0.00922	<0.004	-	-	-
Selenium	0.00305	<0.001	0.0305	<0.01	-	-	-
Vanadium	0.0927	<0.001	0.927	<0.01	-	-	-
Zinc	0.00125	<0.001	0.0125	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.204	<0.019	2.04	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000737	<0.00001	0.000737	<0.0001	-	-	-
Acenaphthene by GCMS	0.000016	<0.000005	0.00016	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000094	<0.000005	0.00094	<0.00005	-	-	-
Fluoranthene by GCMS	0.000617	<0.000005	0.00617	<0.00005	-	-	-
Anthracene by GCMS	0.0000972	<0.000005	0.000972	<0.00005	-	-	-
Phenanthrene by GCMS	0.000292	<0.000005	0.00292	<0.00005	-	-	-
Fluorene by GCMS	0.0000552	<0.000005	0.000552	<0.00005	-	-	-
Chrysene by GCMS	0.000157	<0.000005	0.00157	<0.00005	-	-	-
Pyrene by GCMS	0.000428	<0.000005	0.00428	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000246	<0.000005	0.00246	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000133	<0.000002	0.00133	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000029	<0.000005	0.00029	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00011	<0.000005	0.0011	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0027	<0.000082	0.027	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.60
Conductivity (µS/cm)	272.00
Temperature (°C)	23.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044306
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CC9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.60
Conductivity (µS/cm)	272.00
Temperature (°C)	23.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044325
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CD9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0075	<0.0005	0.075	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00114	<0.001	0.0114	<0.01	-	-	-
Copper	0.00821	<0.0003	0.0821	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0017	<0.0004	0.017	<0.004	-	-	-
Selenium	0.00227	<0.001	0.0227	<0.01	-	-	-
Vanadium	0.0833	<0.001	0.833	<0.01	-	-	-
Zinc	0.00721	<0.001	0.0721	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000273	<0.00001	0.000273	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000744	<0.000005	0.0000744	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000519	<0.000005	0.000519	<0.00005	-	-	-
Anthracene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Phenanthrene by GCMS	0.000035	<0.000005	0.00035	<0.00005	-	-	-
Fluorene by GCMS	0.00000608	<0.000005	0.0000608	<0.00005	-	-	-
Chrysene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Pyrene by GCMS	0.0000434	<0.000005	0.000434	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000642	<0.000005	0.0000642	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000192	<0.000005	0.000192	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000085	<0.000005	0.000085	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000104	<0.000002	0.000104	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000879	<0.000005	0.0000879	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000784	<0.000005	0.0000784	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000256	<0.000082	0.00256	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.12
Conductivity (µS/cm)	316.00
Temperature (°C)	22.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044325
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CD9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.12
Conductivity (µS/cm)	316.00
Temperature (°C)	22.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044332
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CD9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00997	<0.0005	0.0997	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00869	<0.0003	0.0869	<0.003	-	-	-
Lead	0.000273	<0.0002	0.00273	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00189	<0.0004	0.0189	<0.004	-	-	-
Selenium	0.00322	<0.001	0.0322	<0.01	-	-	-
Vanadium	0.0861	<0.001	0.861	<0.01	-	-	-
Zinc	0.0018	<0.001	0.018	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000219	<0.00001	0.000219	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000868	<0.000005	0.0000868	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000817	<0.000005	0.000817	<0.00005	-	-	-
Anthracene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000478	<0.000005	0.000478	<0.00005	-	-	-
Fluorene by GCMS	0.00000729	<0.000005	0.0000729	<0.00005	-	-	-
Chrysene by GCMS	0.0000322	<0.000005	0.000322	<0.00005	-	-	-
Pyrene by GCMS	0.0000721	<0.000005	0.000721	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000474	<0.000005	0.000474	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000237	<0.000005	0.000237	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000233	<0.000002	0.000233	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000657	<0.000005	0.0000657	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000238	<0.000005	0.000238	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000455	<0.000082	0.00455	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.93
Conductivity (µS/cm)	243.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044332
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CD9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.93
Conductivity (µS/cm)	243.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044350
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CG6
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.997	<0.2	9.97	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00322	<0.0005	0.0322	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00135	<0.001	0.0135	<0.01	-	-	-
Copper	0.0142	<0.0003	0.142	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0036	<0.0004	0.036	<0.004	-	-	-
Selenium	0.00909	<0.001	0.0909	<0.01	-	-	-
Vanadium	0.258	<0.001	2.58	<0.01	-	-	-
Zinc	0.00452	<0.001	0.0452	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.013	<0.00001	0.13	<0.0001	-	-	-
Acenaphthene by GCMS	0.00102	<0.000005	0.0102	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0096	<0.000005	0.096	<0.00005	-	-	-
Fluoranthene by GCMS	0.00449	<0.000005	0.0449	<0.00005	-	-	-
Anthracene by GCMS	0.00196	<0.000005	0.0196	<0.00005	-	-	-
Phenanthrene by GCMS	0.0121	<0.000005	0.121	<0.00005	-	-	-
Fluorene by GCMS	0.00714	<0.000005	0.0714	<0.00005	-	-	-
Chrysene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Pyrene by GCMS	0.00255	<0.000005	0.0255	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000234	<0.000005	0.000234	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000317	<0.000002	0.000317	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000225	<0.000005	0.000225	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0521	<0.000082	0.521	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.94
Conductivity (µS/cm)	491.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.109	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044350
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CG6
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.02	<0.01	0.2	<0.1	-	-	-
Aromatics >EC16-EC21	0.025	<0.01	0.25	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.045	<0.01	0.45	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.049	<0.01	0.49	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.94
Conductivity (µS/cm)	491.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044361
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CE9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00777	<0.0005	0.0777	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0124	<0.0003	0.124	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00188	<0.0004	0.0188	<0.004	-	-	-
Selenium	0.00358	<0.001	0.0358	<0.01	-	-	-
Vanadium	0.137	<0.001	1.37	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000279	<0.00001	0.000279	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000111	<0.000005	0.000111	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000647	<0.000005	0.000647	<0.00005	-	-	-
Anthracene by GCMS	0.00000967	<0.000005	0.0000967	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Fluorene by GCMS	0.0000081	<0.000005	0.000081	<0.00005	-	-	-
Chrysene by GCMS	0.00000681	<0.000005	0.0000681	<0.00005	-	-	-
Pyrene by GCMS	0.0000607	<0.000005	0.000607	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000811	<0.000005	0.0000811	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000068	<0.000005	0.000068	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000104	<0.000002	0.000104	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000243	<0.000082	0.00243	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.42
Conductivity (µS/cm)	310.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044361
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CE9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.42
Conductivity (µS/cm)	310.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044369
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CE9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.254	<0.2	2.54	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00586	<0.0005	0.0586	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00795	<0.0003	0.0795	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00171	<0.0004	0.0171	<0.004	-	-	-
Selenium	0.00327	<0.001	0.0327	<0.01	-	-	-
Vanadium	0.152	<0.001	1.52	<0.01	-	-	-
Zinc	0.00103	<0.001	0.0103	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000403	<0.00001	0.000403	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000624	<0.000005	0.000624	<0.00005	-	-	-
Anthracene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000627	<0.000005	0.000627	<0.00005	-	-	-
Fluorene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Chrysene by GCMS	0.00000888	<0.000005	0.0000888	<0.00005	-	-	-
Pyrene by GCMS	0.0000486	<0.000005	0.000486	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000059	<0.000005	0.000059	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000856	<0.000002	0.0000856	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000639	<0.000005	0.0000639	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00033	<0.000082	0.0033	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.61
Conductivity (µS/cm)	311.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044369
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CE9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.61
Conductivity (µS/cm)	311.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044382
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CH7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.398	<0.2	3.98	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00107	<0.0005	0.0107	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00468	<0.001	0.0468	<0.01	-	-	-
Copper	0.0206	<0.0003	0.206	<0.003	-	-	-
Lead	0.000753	<0.0002	0.00753	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00345	<0.0004	0.0345	<0.004	-	-	-
Selenium	0.00179	<0.001	0.0179	<0.01	-	-	-
Vanadium	0.0141	<0.001	0.141	<0.01	-	-	-
Zinc	0.00506	<0.001	0.0506	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000118	<0.00001	0.00118	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000597	<0.000005	0.000597	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000217	<0.000005	0.000217	<0.00005	-	-	-
Fluoranthene by GCMS	0.000238	<0.000005	0.00238	<0.00005	-	-	-
Anthracene by GCMS	0.0000479	<0.000005	0.000479	<0.00005	-	-	-
Phenanthrene by GCMS	0.000299	<0.000005	0.00299	<0.00005	-	-	-
Fluorene by GCMS	0.0000504	<0.000005	0.000504	<0.00005	-	-	-
Chrysene by GCMS	0.00000771	<0.000005	0.0000771	<0.00005	-	-	-
Pyrene by GCMS	0.000176	<0.000005	0.00176	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000595	<0.000005	0.0000595	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000752	<0.000005	0.0000752	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000602	<0.000005	0.0000602	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00104	<0.000082	0.0104	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	11.49
Conductivity (µS/cm)	1,140.00
Temperature (°C)	22.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044382
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CH7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	11.49
Conductivity (µS/cm)	1,140.00
Temperature (°C)	22.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044402
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CH8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.918	<0.2	9.18	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00932	<0.0005	0.0932	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.01	<0.0003	0.1	<0.003	-	-	-
Lead	0.000507	<0.0002	0.00507	<0.002	-	-	-
Manganese	0.00461	<0.003	0.0461	<0.03	-	-	-
Nickel	0.0029	<0.0004	0.029	<0.004	-	-	-
Selenium	0.00956	<0.001	0.0956	<0.01	-	-	-
Vanadium	0.295	<0.001	2.95	<0.01	-	-	-
Zinc	0.00435	<0.001	0.0435	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000181	<0.00001	0.00181	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000512	<0.000005	0.000512	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000219	<0.000005	0.00219	<0.00005	-	-	-
Fluoranthene by GCMS	0.000639	<0.000005	0.00639	<0.00005	-	-	-
Anthracene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Phenanthrene by GCMS	0.000497	<0.000005	0.00497	<0.00005	-	-	-
Fluorene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Chrysene by GCMS	0.000159	<0.000005	0.00159	<0.00005	-	-	-
Pyrene by GCMS	0.000452	<0.000005	0.00452	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000233	<0.000005	0.00233	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000121	<0.000002	0.00121	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000334	<0.000005	0.000334	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000137	<0.000005	0.00137	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00011	<0.000005	0.0011	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00331	<0.000082	0.0331	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.50
Conductivity (µS/cm)	247.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044402
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CH8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.50
Conductivity (µS/cm)	247.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044415
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CH8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.677	<0.2	6.77	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00584	<0.0005	0.0584	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00201	<0.0003	0.0201	<0.003	-	-	-
Lead	0.000217	<0.0002	0.00217	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00217	<0.0004	0.0217	<0.004	-	-	-
Selenium	0.00794	<0.001	0.0794	<0.01	-	-	-
Vanadium	0.16	<0.001	1.6	<0.01	-	-	-
Zinc	0.00402	<0.001	0.0402	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000132	<0.00001	0.00132	<0.0001	-	-	-
Acenaphthene by GCMS	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000632	<0.000005	0.000632	<0.00005	-	-	-
Fluoranthene by GCMS	0.000264	<0.000005	0.00264	<0.00005	-	-	-
Anthracene by GCMS	0.0000461	<0.000005	0.000461	<0.00005	-	-	-
Phenanthrene by GCMS	0.000218	<0.000005	0.00218	<0.00005	-	-	-
Fluorene by GCMS	0.0000703	<0.000005	0.000703	<0.00005	-	-	-
Chrysene by GCMS	0.0000491	<0.000005	0.000491	<0.00005	-	-	-
Pyrene by GCMS	0.000206	<0.000005	0.00206	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000386	<0.000005	0.000386	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000776	<0.000005	0.000776	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000319	<0.000005	0.000319	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000398	<0.000002	0.000398	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000434	<0.000005	0.000434	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000264	<0.000005	0.000264	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00134	<0.000082	0.0134	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.02
Conductivity (µS/cm)	313.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044415
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CH8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.02
Conductivity (µS/cm)	313.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044432
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CI8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000116	<0.00001	0.000116	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0117	<0.0005	0.117	<0.005	-	-	-
Cadmium	0.0000941	<0.00008	0.000941	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00602	<0.0003	0.0602	<0.003	-	-	-
Lead	0.000532	<0.0002	0.00532	<0.002	-	-	-
Manganese	0.00489	<0.003	0.0489	<0.03	-	-	-
Nickel	0.00203	<0.0004	0.0203	<0.004	-	-	-
Selenium	0.00251	<0.001	0.0251	<0.01	-	-	-
Vanadium	0.046	<0.001	0.46	<0.01	-	-	-
Zinc	0.0026	<0.001	0.026	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.814	<0.019	8.14	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000152	<0.00001	0.000152	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000998	<0.000005	0.0000998	<0.00005	-	-	-
Fluoranthene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Anthracene by GCMS	0.00002	<0.000005	0.0002	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000461	<0.000005	0.000461	<0.00005	-	-	-
Fluorene by GCMS	0.00000865	<0.000005	0.0000865	<0.00005	-	-	-
Chrysene by GCMS	0.0000524	<0.000005	0.000524	<0.00005	-	-	-
Pyrene by GCMS	0.0000796	<0.000005	0.000796	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000386	<0.000005	0.000386	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000857	<0.000005	0.000857	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000341	<0.000005	0.000341	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000421	<0.000002	0.000421	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000439	<0.000005	0.000439	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000341	<0.000005	0.000341	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000635	<0.000082	0.00635	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	8.74
Conductivity (µS/cm)	200.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044432
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CI8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	8.74
Conductivity (µS/cm)	200.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044440
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CI8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.563	<0.2	5.63	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.056	<0.05	0.56	<0.5	-	-	-
Arsenic	0.0162	<0.0005	0.162	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0112	<0.0003	0.112	<0.003	-	-	-
Lead	0.00137	<0.0002	0.0137	<0.002	-	-	-
Manganese	0.00776	<0.003	0.0776	<0.03	-	-	-
Nickel	0.00325	<0.0004	0.0325	<0.004	-	-	-
Selenium	0.00982	<0.001	0.0982	<0.01	-	-	-
Vanadium	0.215	<0.001	2.15	<0.01	-	-	-
Zinc	0.00152	<0.001	0.0152	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.495	<0.019	4.95	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000739	<0.00001	0.000739	<0.0001	-	-	-
Acenaphthene by GCMS	0.000024	<0.000005	0.00024	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000868	<0.000005	0.000868	<0.00005	-	-	-
Fluoranthene by GCMS	0.000645	<0.000005	0.00645	<0.00005	-	-	-
Anthracene by GCMS	0.000107	<0.000005	0.00107	<0.00005	-	-	-
Phenanthrene by GCMS	0.000391	<0.000005	0.00391	<0.00005	-	-	-
Fluorene by GCMS	0.0000817	<0.000005	0.000817	<0.00005	-	-	-
Chrysene by GCMS	0.000218	<0.000005	0.00218	<0.00005	-	-	-
Pyrene by GCMS	0.000451	<0.000005	0.00451	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000192	<0.000005	0.00192	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000286	<0.000005	0.00286	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000114	<0.000005	0.00114	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000161	<0.000002	0.00161	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000299	<0.000005	0.000299	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000172	<0.000005	0.00172	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00014	<0.000005	0.0014	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00317	<0.000082	0.0317	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.91
Conductivity (µS/cm)	255.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044440
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CI8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.91
Conductivity (µS/cm)	255.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044457
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CI8
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.938	<0.2	9.38	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.053	<0.05	0.53	<0.5	-	-	-
Arsenic	0.00943	<0.0005	0.0943	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0141	<0.0003	0.141	<0.003	-	-	-
Lead	0.00064	<0.0002	0.0064	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00373	<0.0004	0.0373	<0.004	-	-	-
Selenium	0.0125	<0.001	0.125	<0.01	-	-	-
Vanadium	0.389	<0.001	3.89	<0.01	-	-	-
Zinc	0.00185	<0.001	0.0185	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.401	<0.019	4.01	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000114	<0.00001	0.00114	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000556	<0.000005	0.000556	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000193	<0.000005	0.00193	<0.00005	-	-	-
Fluoranthene by GCMS	0.000597	<0.000005	0.00597	<0.00005	-	-	-
Anthracene by GCMS	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Phenanthrene by GCMS	0.000692	<0.000005	0.00692	<0.00005	-	-	-
Fluorene by GCMS	0.000186	<0.000005	0.00186	<0.00005	-	-	-
Chrysene by GCMS	0.0000874	<0.000005	0.000874	<0.00005	-	-	-
Pyrene by GCMS	0.000422	<0.000005	0.00422	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000818	<0.000005	0.000818	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000118	<0.000005	0.00118	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000494	<0.000005	0.000494	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000061	<0.000002	0.00061	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000611	<0.000005	0.000611	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000545	<0.000005	0.000545	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00293	<0.000082	0.0293	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.68
Conductivity (µS/cm)	330.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044457
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CI8
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.68
Conductivity (µS/cm)	330.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044470
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CJ8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00759	<0.0005	0.0759	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00668	<0.0003	0.0668	<0.003	-	-	-
Lead	0.000217	<0.0002	0.00217	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00165	<0.0004	0.0165	<0.004	-	-	-
Selenium	0.0061	<0.001	0.061	<0.01	-	-	-
Vanadium	0.166	<0.001	1.66	<0.01	-	-	-
Zinc	0.00102	<0.001	0.0102	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.207	<0.019	2.07	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000699	<0.00001	0.000699	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000522	<0.000005	0.000522	<0.00005	-	-	-
Fluoranthene by GCMS	0.000399	<0.000005	0.00399	<0.00005	-	-	-
Anthracene by GCMS	0.0000659	<0.000005	0.000659	<0.00005	-	-	-
Phenanthrene by GCMS	0.000231	<0.000005	0.00231	<0.00005	-	-	-
Fluorene by GCMS	0.0000431	<0.000005	0.000431	<0.00005	-	-	-
Chrysene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Pyrene by GCMS	0.000295	<0.000005	0.00295	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000762	<0.000005	0.000762	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000166	<0.000005	0.00166	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000689	<0.000005	0.000689	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000896	<0.000002	0.000896	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000663	<0.000005	0.000663	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00007	<0.000005	0.0007	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00183	<0.000082	0.0183	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	268.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044470
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CJ8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	268.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044485
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CJ7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00161	<0.0005	0.0161	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00123	<0.001	0.0123	<0.01	-	-	-
Copper	0.00317	<0.0003	0.0317	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000691	<0.0004	0.00691	<0.004	-	-	-
Selenium	0.00158	<0.001	0.0158	<0.01	-	-	-
Vanadium	0.0704	<0.001	0.704	<0.01	-	-	-
Zinc	0.0017	<0.001	0.017	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000226	<0.00001	0.000226	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000653	<0.000005	0.0000653	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000405	<0.000005	0.000405	<0.00005	-	-	-
Anthracene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000262	<0.000005	0.000262	<0.00005	-	-	-
Fluorene by GCMS	0.00000652	<0.000005	0.0000652	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000397	<0.000005	0.000397	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000166	<0.000082	0.00166	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	11.06
Conductivity (µS/cm)	514.00
Temperature (°C)	22.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044485
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CJ7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	11.06
Conductivity (µS/cm)	514.00
Temperature (°C)	22.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044493
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CJ7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0111	<0.0005	0.111	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00319	<0.0003	0.0319	<0.003	-	-	-
Lead	0.000297	<0.0002	0.00297	<0.002	-	-	-
Manganese	0.00331	<0.003	0.0331	<0.03	-	-	-
Nickel	0.00141	<0.0004	0.0141	<0.004	-	-	-
Selenium	0.0024	<0.001	0.024	<0.01	-	-	-
Vanadium	0.0417	<0.001	0.417	<0.01	-	-	-
Zinc	0.00907	<0.001	0.0907	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.633	<0.019	6.33	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000104	<0.00001	0.000104	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000354	<0.000005	0.000354	<0.00005	-	-	-
Anthracene by GCMS	0.00000844	<0.000005	0.0000844	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000214	<0.000005	0.000214	<0.00005	-	-	-
Fluorene by GCMS	0.00000579	<0.000005	0.0000579	<0.00005	-	-	-
Chrysene by GCMS	0.00000543	<0.000005	0.0000543	<0.00005	-	-	-
Pyrene by GCMS	0.0000259	<0.000005	0.000259	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000856	<0.000005	0.0000856	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000679	<0.000005	0.0000679	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000688	<0.000002	0.0000688	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000685	<0.000005	0.0000685	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000155	<0.000082	0.00155	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.00
Conductivity (µS/cm)	167.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044493
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CJ7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.00
Conductivity (µS/cm)	167.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044508
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CI7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0107	<0.0005	0.107	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00553	<0.0003	0.0553	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00158	<0.0004	0.0158	<0.004	-	-	-
Selenium	0.00279	<0.001	0.0279	<0.01	-	-	-
Vanadium	0.0571	<0.001	0.571	<0.01	-	-	-
Zinc	0.00197	<0.001	0.0197	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.278	<0.019	2.78	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000179	<0.00001	0.000179	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000941	<0.000005	0.000941	<0.00005	-	-	-
Anthracene by GCMS	0.0000195	<0.000005	0.000195	<0.00005	-	-	-
Phenanthrene by GCMS	0.000047	<0.000005	0.00047	<0.00005	-	-	-
Fluorene by GCMS	0.00000937	<0.000005	0.0000937	<0.00005	-	-	-
Chrysene by GCMS	0.0000384	<0.000005	0.000384	<0.00005	-	-	-
Pyrene by GCMS	0.0000695	<0.000005	0.000695	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000265	<0.000005	0.000265	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000625	<0.000005	0.000625	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000267	<0.000005	0.000267	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000357	<0.000002	0.000357	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000898	<0.000005	0.0000898	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000307	<0.000005	0.000307	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000025	<0.000005	0.00025	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000524	<0.000082	0.00524	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	8.91
Conductivity (µS/cm)	206.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044508
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CI7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	8.91
Conductivity (µS/cm)	206.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.8
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044517
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CI7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0124	<0.0005	0.124	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00443	<0.0003	0.0443	<0.003	-	-	-
Lead	0.000234	<0.0002	0.00234	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00187	<0.0004	0.0187	<0.004	-	-	-
Selenium	0.00226	<0.001	0.0226	<0.01	-	-	-
Vanadium	0.045	<0.001	0.45	<0.01	-	-	-
Zinc	0.0026	<0.001	0.026	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.436	<0.019	4.36	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000685	<0.000005	0.0000685	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000784	<0.000005	0.000784	<0.00005	-	-	-
Anthracene by GCMS	0.0000164	<0.000005	0.000164	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000463	<0.000005	0.000463	<0.00005	-	-	-
Fluorene by GCMS	0.00000647	<0.000005	0.0000647	<0.00005	-	-	-
Chrysene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Pyrene by GCMS	0.0000671	<0.000005	0.000671	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000459	<0.000005	0.000459	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000197	<0.000005	0.000197	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000024	<0.000002	0.00024	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000687	<0.000005	0.0000687	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000213	<0.000005	0.000213	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000213	<0.000005	0.000213	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000413	<0.000082	0.00413	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.06
Conductivity (µS/cm)	200.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.8
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044517
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CI7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	9.06
Conductivity (µS/cm)	200.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044533
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CF6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.485	<0.2	4.85	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00765	<0.0005	0.0765	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0106	<0.0003	0.106	<0.003	-	-	-
Lead	0.000297	<0.0002	0.00297	<0.002	-	-	-
Manganese	0.00452	<0.003	0.0452	<0.03	-	-	-
Nickel	0.00231	<0.0004	0.0231	<0.004	-	-	-
Selenium	0.00525	<0.001	0.0525	<0.01	-	-	-
Vanadium	0.187	<0.001	1.87	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.235	<0.019	2.35	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000148	<0.00001	0.00148	<0.0001	-	-	-
Acenaphthene by GCMS	0.000787	<0.000005	0.00787	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00651	<0.000005	0.0651	<0.00005	-	-	-
Fluoranthene by GCMS	0.00371	<0.000005	0.0371	<0.00005	-	-	-
Anthracene by GCMS	0.00203	<0.000005	0.0203	<0.00005	-	-	-
Phenanthrene by GCMS	0.0107	<0.000005	0.107	<0.00005	-	-	-
Fluorene by GCMS	0.0065	<0.000005	0.065	<0.00005	-	-	-
Chrysene by GCMS	0.00032	<0.000005	0.0032	<0.00005	-	-	-
Pyrene by GCMS	0.00232	<0.000005	0.0232	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000378	<0.000005	0.00378	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000467	<0.000005	0.00467	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000175	<0.000005	0.00175	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000256	<0.000002	0.00256	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000037	<0.000005	0.00037	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000146	<0.000005	0.00146	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00016	<0.000005	0.0016	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0347	<0.000082	0.347	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.40
Conductivity (µS/cm)	276.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044533
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CF6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.012	<0.01	0.12	<0.1	-	-	-
Aromatics >EC16-EC21	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.031	<0.01	0.31	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.035	<0.01	0.35	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.40
Conductivity (µS/cm)	276.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044555
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CF6
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.699	<0.2	6.99	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.01	<0.0005	0.1	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0112	<0.0003	0.112	<0.003	-	-	-
Lead	0.000214	<0.0002	0.00214	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00309	<0.0004	0.0309	<0.004	-	-	-
Selenium	0.00664	<0.001	0.0664	<0.01	-	-	-
Vanadium	0.296	<0.001	2.96	<0.01	-	-	-
Zinc	0.00119	<0.001	0.0119	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.231	<0.019	2.31	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000743	<0.00001	0.000743	<0.0001	-	-	-
Acenaphthene by GCMS	0.00152	<0.000005	0.0152	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000948	<0.000005	0.00948	<0.00005	-	-	-
Fluoranthene by GCMS	0.00239	<0.000005	0.0239	<0.00005	-	-	-
Anthracene by GCMS	0.000496	<0.000005	0.00496	<0.00005	-	-	-
Phenanthrene by GCMS	0.00257	<0.000005	0.0257	<0.00005	-	-	-
Fluorene by GCMS	0.00119	<0.000005	0.0119	<0.00005	-	-	-
Chrysene by GCMS	0.000164	<0.000005	0.00164	<0.00005	-	-	-
Pyrene by GCMS	0.00157	<0.000005	0.0157	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000161	<0.000005	0.00161	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000157	<0.000005	0.00157	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000645	<0.000005	0.000645	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000973	<0.000002	0.000973	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000134	<0.000005	0.000134	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000463	<0.000005	0.000463	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000054	<0.000005	0.00054	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0115	<0.000082	0.115	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.50
Conductivity (µS/cm)	308.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044555
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CF6
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.50
Conductivity (µS/cm)	308.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044571
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CE6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00693	<0.0005	0.0693	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00647	<0.0003	0.0647	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00174	<0.0004	0.0174	<0.004	-	-	-
Selenium	0.00271	<0.001	0.0271	<0.01	-	-	-
Vanadium	0.126	<0.001	1.26	<0.01	-	-	-
Zinc	0.00267	<0.001	0.0267	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000103	<0.00001	0.00103	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000261	<0.000005	0.000261	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000991	<0.000005	0.000991	<0.00005	-	-	-
Fluoranthene by GCMS	0.000964	<0.000005	0.00964	<0.00005	-	-	-
Anthracene by GCMS	0.000191	<0.000005	0.00191	<0.00005	-	-	-
Phenanthrene by GCMS	0.000376	<0.000005	0.00376	<0.00005	-	-	-
Fluorene by GCMS	0.000119	<0.000005	0.00119	<0.00005	-	-	-
Chrysene by GCMS	0.000253	<0.000005	0.00253	<0.00005	-	-	-
Pyrene by GCMS	0.000742	<0.000005	0.00742	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000258	<0.000005	0.00258	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000347	<0.000005	0.00347	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000158	<0.000005	0.00158	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000193	<0.000002	0.00193	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00004	<0.000005	0.0004	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000138	<0.000005	0.00138	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00414	<0.000082	0.0414	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.10
Conductivity (µS/cm)	279.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044571
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CE6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.10
Conductivity (µS/cm)	279.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.889

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044578
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CE6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.21	<0.2	12.1	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0093	<0.0005	0.093	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0167	<0.0003	0.167	<0.003	-	-	-
Lead	0.000344	<0.0002	0.00344	<0.002	-	-	-
Manganese	0.00384	<0.003	0.0384	<0.03	-	-	-
Nickel	0.00413	<0.0004	0.0413	<0.004	-	-	-
Selenium	0.00702	<0.001	0.0702	<0.01	-	-	-
Vanadium	0.358	<0.001	3.58	<0.01	-	-	-
Zinc	0.00545	<0.001	0.0545	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00004	<0.00001	0.0004	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000723	<0.000005	0.000723	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Fluoranthene by GCMS	0.000856	<0.000005	0.00856	<0.00005	-	-	-
Anthracene by GCMS	0.000134	<0.000005	0.00134	<0.00005	-	-	-
Phenanthrene by GCMS	0.000523	<0.000005	0.00523	<0.00005	-	-	-
Fluorene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Chrysene by GCMS	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Pyrene by GCMS	0.000557	<0.000005	0.00557	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000512	<0.000005	0.000512	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000678	<0.000002	0.000678	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000446	<0.000005	0.000446	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000454	<0.000005	0.000454	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00298	<0.000082	0.0298	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.67
Conductivity (µS/cm)	346.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180802-25
Lab Sample Number(s)	18044578
Sampled Date	01-Aug-2018
Customer Sample Ref.	3CE6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Aug-2018
pH (pH Units)	10.67
Conductivity (µS/cm)	346.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Test Completion Dates

Lab Sample No(s)	18044272	18044287	18044280	18044291	18044227	18044234	18044241	18044298	18044306	18044248
Customer Sample Ref.	3CB6	3CB9	3CB6-V	3CB9-V	3CC6	3CC6	3CC6	3CC9	3CC9	3CC6-V
AGS Ref.										
Depth	0.50 - 0.50	0.50 - 0.50	1.20 - 1.20	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	09-Aug-2018	09-Aug-2018				09-Aug-2018			09-Aug-2018	
Ammoniacal Nitrogen	08-Aug-2018	08-Aug-2018			07-Aug-2018	08-Aug-2018	08-Aug-2018	09-Aug-2018	08-Aug-2018	
Ammonium Soil by Titration	03-Aug-2018	06-Aug-2018	06-Aug-2018	03-Aug-2018	03-Aug-2018	06-Aug-2018	03-Aug-2018	06-Aug-2018	03-Aug-2018	06-Aug-2018
Anions by Kone (soil)	06-Aug-2018	06-Aug-2018				06-Aug-2018			06-Aug-2018	
Asbestos ID in Solid Samples	03-Aug-2018	03-Aug-2018				03-Aug-2018			03-Aug-2018	
CEN 10:1 Leachate (1 Stage)	07-Aug-2018	03-Aug-2018			03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	
CEN Readings	08-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018	06-Aug-2018	07-Aug-2018	06-Aug-2018	
Cyanide Comp/Free/Total/Thiocyanate	09-Aug-2018	08-Aug-2018	06-Aug-2018	06-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	06-Aug-2018
Dissolved Metals by ICP-MS	09-Aug-2018	09-Aug-2018			09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	07-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018	07-Aug-2018	08-Aug-2018	07-Aug-2018	
EPH CWG (Aliphatic) GC (S)	07-Aug-2018	08-Aug-2018	07-Aug-2018	07-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	08-Aug-2018	06-Aug-2018	06-Aug-2018
EPH CWG (Aromatic) Aqueous GC (W)	07-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018	07-Aug-2018	08-Aug-2018	07-Aug-2018	
EPH CWG (Aromatic) GC (S)	07-Aug-2018	08-Aug-2018	07-Aug-2018	07-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	08-Aug-2018	06-Aug-2018	06-Aug-2018
GRO by GC-FID (S)	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018
GRO by GC-FID (W)	07-Aug-2018	08-Aug-2018			08-Aug-2018	08-Aug-2018	08-Aug-2018	09-Aug-2018	08-Aug-2018	
Mercury Dissolved	07-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018	07-Aug-2018	08-Aug-2018	07-Aug-2018	
Metals in solid samples by OES	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	10-Aug-2018	10-Aug-2018	09-Aug-2018	10-Aug-2018
PAH by GCMS	07-Aug-2018	07-Aug-2018	08-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018
PAH Spec MS - Aqueous (W)	09-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018	07-Aug-2018	08-Aug-2018	07-Aug-2018	
pH	05-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018
pH Value	05-Aug-2018	05-Aug-2018			05-Aug-2018	05-Aug-2018	05-Aug-2018	07-Aug-2018	05-Aug-2018	
Phenols by HPLC (S)	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	08-Aug-2018	06-Aug-2018
Sample description	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018
Total Organic Carbon	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	12-Aug-2018	10-Aug-2018	12-Aug-2018	10-Aug-2018	10-Aug-2018	12-Aug-2018
Total Sulphate	07-Aug-2018	07-Aug-2018				07-Aug-2018			07-Aug-2018	
Total Sulphur	08-Aug-2018	08-Aug-2018				08-Aug-2018			08-Aug-2018	
TPH CWG (W)	07-Aug-2018	08-Aug-2018			08-Aug-2018	08-Aug-2018	08-Aug-2018	09-Aug-2018	08-Aug-2018	
TPH CWG GC (S)	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018
VOC MS (S)	08-Aug-2018	07-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	09-Aug-2018	08-Aug-2018	08-Aug-2018

Lab Sample No(s)	18044312	18044214	18044219	18044325	18044332	18044223	18044345	18044571	18044578	18044361
Customer Sample Ref.	3CC9-V	3CD6	3CD6	3CD9	3CD9	3CD6-V	3CD9-V	3CE6	3CE6	3CE9
AGS Ref.										
Depth	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.20 - 1.20	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)			09-Aug-2018		09-Aug-2018				08-Aug-2018	
Ammoniacal Nitrogen		08-Aug-2018	07-Aug-2018	09-Aug-2018	09-Aug-2018			09-Aug-2018	09-Aug-2018	08-Aug-2018
Ammonium Soil by Titration	03-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018
Anions by Kone (soil)			06-Aug-2018		06-Aug-2018				06-Aug-2018	
Asbestos ID in Solid Samples			03-Aug-2018		08-Aug-2018				08-Aug-2018	
Asbestos Quantification - Full									08-Aug-2018	
CEN 10:1 Leachate (1 Stage)		03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018			03-Aug-2018	03-Aug-2018	03-Aug-2018
CEN Readings		06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018	06-Aug-2018
Cyanide Comp/Free/Total/Thiocyanate	06-Aug-2018	08-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	06-Aug-2018	06-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018
Dissolved Metals by ICP-MS		09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018			09-Aug-2018	09-Aug-2018	09-Aug-2018
EPH CWG (Aliphatic) Aqueous GC (W)		07-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018			08-Aug-2018	08-Aug-2018	07-Aug-2018
EPH CWG (Aliphatic) GC (S)	07-Aug-2018	06-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018	06-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018
EPH CWG (Aromatic) Aqueous GC (W)		07-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018			08-Aug-2018	08-Aug-2018	07-Aug-2018
EPH CWG (Aromatic) GC (S)	07-Aug-2018	06-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018	06-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018
GRO by GC-FID (S)	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018	09-Aug-2018	10-Aug-2018
GRO by GC-FID (W)		08-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018			09-Aug-2018	09-Aug-2018	08-Aug-2018
Mercury Dissolved		07-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018			08-Aug-2018	08-Aug-2018	07-Aug-2018
Metals in solid samples by OES	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018	10-Aug-2018	08-Aug-2018	10-Aug-2018
PAH by GCMS	07-Aug-2018	08-Aug-2018	07-Aug-2018	07-Aug-2018	07-Aug-2018	07-Aug-2018	07-Aug-2018	07-Aug-2018	07-Aug-2018	08-Aug-2018
PAH Spec MS - Aqueous (W)		07-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018			08-Aug-2018	08-Aug-2018	07-Aug-2018
pH	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	03-Aug-2018	05-Aug-2018	06-Aug-2018	06-Aug-2018	05-Aug-2018	05-Aug-2018
pH Value		05-Aug-2018	05-Aug-2018	07-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018	05-Aug-2018
Phenols by HPLC (S)	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	08-Aug-2018	06-Aug-2018
Sample description	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018
Total Organic Carbon	10-Aug-2018	10-Aug-2018	10-Aug-2018	12-Aug-2018	10-Aug-2018	12-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018
Total Sulphate			07-Aug-2018		07-Aug-2018				07-Aug-2018	
Total Sulphur			08-Aug-2018		08-Aug-2018				12-Aug-2018	
TPH CWG (W)		08-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018			09-Aug-2018	09-Aug-2018	08-Aug-2018
TPH CWG GC (S)	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018	09-Aug-2018	10-Aug-2018
VOC MS (S)	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Lab Sample No(s)	18044369	18044210	18044375	18044533	18044555	18044565	18044205	18044265	18044350	18044446
Customer Sample Ref.	3CE9	3CE6-V	3CE9-V	3CF6	3CF6	3CF6-V	3CG6	3CG6	3CG6	3CG6-V
AGS Ref.										
Depth	1.00 - 1.00	1.10 - 1.10	1.70 - 1.70	0.50 - 0.50	0.80 - 0.80	0.90 - 0.90	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	08-Aug-2018				09-Aug-2018		09-Aug-2018		08-Aug-2018	
Ammoniacal Nitrogen	08-Aug-2018			08-Aug-2018	09-Aug-2018		08-Aug-2018	09-Aug-2018	08-Aug-2018	
Ammonium Soil by Titration	03-Aug-2018	03-Aug-2018	06-Aug-2018	06-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	06-Aug-2018
Anions by Kone (soil)	06-Aug-2018				06-Aug-2018		06-Aug-2018		06-Aug-2018	
Asbestos ID in Solid Samples	07-Aug-2018				03-Aug-2018		06-Aug-2018		07-Aug-2018	
Asbestos Quantification - Full									08-Aug-2018	
CEN 10:1 Leachate (1 Stage)	03-Aug-2018			03-Aug-2018	03-Aug-2018		03-Aug-2018	03-Aug-2018	03-Aug-2018	
CEN Readings	06-Aug-2018			06-Aug-2018	06-Aug-2018		06-Aug-2018	06-Aug-2018	06-Aug-2018	
Cyanide Comp/Free/Total/Thiocyanate	09-Aug-2018	06-Aug-2018	06-Aug-2018	09-Aug-2018	09-Aug-2018	06-Aug-2018	09-Aug-2018	09-Aug-2018	08-Aug-2018	06-Aug-2018
Dissolved Metals by ICP-MS	09-Aug-2018			09-Aug-2018	09-Aug-2018		09-Aug-2018	09-Aug-2018	09-Aug-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	07-Aug-2018			07-Aug-2018	07-Aug-2018		07-Aug-2018	08-Aug-2018	07-Aug-2018	
EPH CWG (Aliphatic) GC (S)	08-Aug-2018	06-Aug-2018	08-Aug-2018	06-Aug-2018	08-Aug-2018	06-Aug-2018	07-Aug-2018	06-Aug-2018	08-Aug-2018	07-Aug-2018
EPH CWG (Aromatic) Aqueous GC (W)	07-Aug-2018			07-Aug-2018	07-Aug-2018		07-Aug-2018	08-Aug-2018	07-Aug-2018	
EPH CWG (Aromatic) GC (S)	08-Aug-2018	06-Aug-2018	08-Aug-2018	06-Aug-2018	08-Aug-2018	06-Aug-2018	07-Aug-2018	06-Aug-2018	08-Aug-2018	07-Aug-2018
GRO by GC-FID (S)	10-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	09-Aug-2018
GRO by GC-FID (W)	07-Aug-2018			08-Aug-2018	08-Aug-2018		08-Aug-2018	09-Aug-2018	07-Aug-2018	
Mercury Dissolved	07-Aug-2018			07-Aug-2018	07-Aug-2018		07-Aug-2018	08-Aug-2018	07-Aug-2018	
Metals in solid samples by OES	08-Aug-2018	10-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	08-Aug-2018	10-Aug-2018
PAH by GCMS	07-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018	08-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018
PAH Spec MS - Aqueous (W)	07-Aug-2018			07-Aug-2018	07-Aug-2018		07-Aug-2018	08-Aug-2018	09-Aug-2018	
pH	05-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018
pH Value	06-Aug-2018			05-Aug-2018	05-Aug-2018		06-Aug-2018	07-Aug-2018	05-Aug-2018	
Phenols by HPLC (S)	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	07-Aug-2018
Sample description	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018
Total Organic Carbon	10-Aug-2018	12-Aug-2018	12-Aug-2018	10-Aug-2018	10-Aug-2018	12-Aug-2018	12-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018
Total Sulphate	07-Aug-2018				07-Aug-2018		07-Aug-2018		07-Aug-2018	
Total Sulphur	12-Aug-2018				12-Aug-2018		08-Aug-2018		12-Aug-2018	
TPH CWG (W)	07-Aug-2018			08-Aug-2018	08-Aug-2018		08-Aug-2018	09-Aug-2018	07-Aug-2018	
TPH CWG GC (S)	10-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	09-Aug-2018
VOC MS (S)	07-Aug-2018	08-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018

Lab Sample No(s)	18044382	18044402	18044415	18044389	18044421	18044508	18044517	18044432	18044440	18044457
Customer Sample Ref.	3CH7	3CH8	3CH8	3CH7-V	3CH8-V	3CI7	3CI7	3CI8	3CI8	3CI8
AGS Ref.										
Depth	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	0.90 - 0.90	1.10 - 1.10	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	09-Aug-2018		09-Aug-2018				09-Aug-2018		09-Aug-2018	
Ammoniacal Nitrogen	08-Aug-2018	09-Aug-2018	08-Aug-2018			09-Aug-2018	09-Aug-2018	09-Aug-2018	08-Aug-2018	07-Aug-2018
Ammonium Soil by Titration	06-Aug-2018	06-Aug-2018	06-Aug-2018	03-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	03-Aug-2018	06-Aug-2018	06-Aug-2018
Anions by Kone (soil)	06-Aug-2018		06-Aug-2018				06-Aug-2018		06-Aug-2018	
Asbestos ID in Solid Samples	07-Aug-2018		07-Aug-2018				03-Aug-2018		07-Aug-2018	
Asbestos Quantification - Full							07-Aug-2018			
CEN 10:1 Leachate (1 Stage)	03-Aug-2018	03-Aug-2018	03-Aug-2018			03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018	03-Aug-2018
CEN Readings	06-Aug-2018	06-Aug-2018	06-Aug-2018			06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018
Cyanide Comp/Free/Total/Thiocyanate	09-Aug-2018	09-Aug-2018	09-Aug-2018	06-Aug-2018	06-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018
Dissolved Metals by ICP-MS	09-Aug-2018	09-Aug-2018	09-Aug-2018			09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018
EPH CWG (Aliphatic) Aqueous GC (W)	08-Aug-2018	08-Aug-2018	08-Aug-2018			08-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018	07-Aug-2018
EPH CWG (Aliphatic) GC (S)	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018
EPH CWG (Aromatic) Aqueous GC (W)	08-Aug-2018	08-Aug-2018	08-Aug-2018			08-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018	07-Aug-2018
EPH CWG (Aromatic) GC (S)	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018
GRO by GC-FID (S)	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018
GRO by GC-FID (W)	09-Aug-2018	09-Aug-2018	09-Aug-2018			09-Aug-2018	09-Aug-2018	09-Aug-2018	08-Aug-2018	08-Aug-2018
Mercury Dissolved	08-Aug-2018	08-Aug-2018	08-Aug-2018			08-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018	07-Aug-2018
Metals in solid samples by OES	09-Aug-2018	10-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018
PAH by GCMS	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018	08-Aug-2018	07-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018
PAH Spec MS - Aqueous (W)	08-Aug-2018	08-Aug-2018	08-Aug-2018			08-Aug-2018	08-Aug-2018	08-Aug-2018	09-Aug-2018	07-Aug-2018
pH	05-Aug-2018	05-Aug-2018	05-Aug-2018	05-Aug-2018	05-Aug-2018	03-Aug-2018	05-Aug-2018	05-Aug-2018	06-Aug-2018	06-Aug-2018
pH Value	07-Aug-2018	07-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018	07-Aug-2018	05-Aug-2018	05-Aug-2018
Phenols by HPLC (S)	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	08-Aug-2018	08-Aug-2018
Sample description	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018
Total Organic Carbon	10-Aug-2018	10-Aug-2018	12-Aug-2018	10-Aug-2018	10-Aug-2018	12-Aug-2018	10-Aug-2018	10-Aug-2018	12-Aug-2018	10-Aug-2018
Total Sulphate	07-Aug-2018		07-Aug-2018				07-Aug-2018		07-Aug-2018	
Total Sulphur	12-Aug-2018		12-Aug-2018				08-Aug-2018		08-Aug-2018	
TPH CWG (W)	09-Aug-2018	09-Aug-2018	09-Aug-2018			09-Aug-2018	09-Aug-2018	09-Aug-2018	08-Aug-2018	08-Aug-2018
TPH CWG GC (S)	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018
VOC MS (S)	07-Aug-2018	07-Aug-2018	07-Aug-2018	07-Aug-2018	07-Aug-2018	08-Aug-2018	07-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180802-25	**Client Reference:**		**Report Number:**	468218
Location:	Llanwern	**Order Number:**	LLA468	**Superseded Report:**	468217

Lab Sample No(s)	18044548	18044525	18044464	18044485	18044493	18044470	18044501	18044479	18044254	18044261
Customer Sample Ref.	3CI6-V	3CI7-V	3CI8-V	3CJ7	3CJ7	3CJ8	3CJ7-V	3CJ8-V	SPJC-01	SPJC-02
AGS Ref.										
Depth	0.20 - 0.20	2.00 - 2.00	2.60 - 2.60	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.40 - 1.40	0.80 - 0.80	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)					09-Aug-2018	09-Aug-2018			09-Aug-2018	
Ammoniacal Nitrogen				07-Aug-2018	08-Aug-2018	08-Aug-2018			07-Aug-2018	07-Aug-2018
Ammonium Soil by Titration	06-Aug-2018	03-Aug-2018	06-Aug-2018	06-Aug-2018	03-Aug-2018	03-Aug-2018	06-Aug-2018	03-Aug-2018	03-Aug-2018	06-Aug-2018
Anions by Kone (soil)					06-Aug-2018	06-Aug-2018			06-Aug-2018	
Asbestos ID in Solid Samples					07-Aug-2018	07-Aug-2018			03-Aug-2018	
CEN 10:1 Leachate (1 Stage)				03-Aug-2018	03-Aug-2018	03-Aug-2018			07-Aug-2018	03-Aug-2018
CEN Readings				06-Aug-2018	06-Aug-2018	06-Aug-2018			08-Aug-2018	06-Aug-2018
Cyanide Comp/Free/Total/Thiocyanate	06-Aug-2018	06-Aug-2018	06-Aug-2018	09-Aug-2018	08-Aug-2018	09-Aug-2018	06-Aug-2018	07-Aug-2018	09-Aug-2018	09-Aug-2018
Dissolved Metals by ICP-MS				09-Aug-2018	09-Aug-2018	09-Aug-2018			09-Aug-2018	09-Aug-2018
EPH CWG (Aliphatic) Aqueous GC (W)				07-Aug-2018	07-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018
EPH CWG (Aliphatic) GC (S)	08-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018	08-Aug-2018	07-Aug-2018	06-Aug-2018
EPH CWG (Aromatic) Aqueous GC (W)				07-Aug-2018	07-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018
EPH CWG (Aromatic) GC (S)	08-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018	08-Aug-2018	07-Aug-2018	06-Aug-2018
GRO by GC-FID (S)	10-Aug-2018	10-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	09-Aug-2018
GRO by GC-FID (W)				09-Aug-2018	08-Aug-2018	08-Aug-2018			08-Aug-2018	08-Aug-2018
Mercury Dissolved				07-Aug-2018	07-Aug-2018	07-Aug-2018			07-Aug-2018	07-Aug-2018
Metals in solid samples by OES	10-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018
PAH by GCMS	07-Aug-2018	08-Aug-2018	08-Aug-2018	07-Aug-2018	08-Aug-2018	07-Aug-2018	07-Aug-2018	07-Aug-2018	07-Aug-2018	08-Aug-2018
PAH Spec MS - Aqueous (W)				07-Aug-2018	07-Aug-2018	07-Aug-2018			09-Aug-2018	07-Aug-2018
pH	03-Aug-2018	03-Aug-2018	06-Aug-2018	06-Aug-2018	05-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018
pH Value				05-Aug-2018	05-Aug-2018	06-Aug-2018			05-Aug-2018	06-Aug-2018
Phenols by HPLC (S)	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	06-Aug-2018	08-Aug-2018	06-Aug-2018	06-Aug-2018
Sample description	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018	02-Aug-2018
Total Organic Carbon	12-Aug-2018	12-Aug-2018	10-Aug-2018	10-Aug-2018	12-Aug-2018	12-Aug-2018	12-Aug-2018	12-Aug-2018	10-Aug-2018	12-Aug-2018
Total Sulphate					07-Aug-2018	07-Aug-2018			07-Aug-2018	
Total Sulphur					08-Aug-2018	08-Aug-2018			08-Aug-2018	
TPH CWG (W)				09-Aug-2018	08-Aug-2018	08-Aug-2018			08-Aug-2018	08-Aug-2018
TPH CWG GC (S)	10-Aug-2018	10-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	09-Aug-2018
VOC MS (S)	08-Aug-2018	07-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	20 August 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180808-58
Your Reference:	
Location:	Llanwern
Report No:	468877

We received 26 samples on Wednesday August 08, 2018 and 26 of these samples were scheduled for analysis which was completed on Monday August 20, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18076879	3CA1		0.50 - 0.50	07/08/2018
18076926	3CA1		1.00 - 1.00	07/08/2018
18076969	3CA1		1.50 - 1.50	07/08/2018
18076978	3CA2		0.50 - 0.50	07/08/2018
18076982	3CA2		1.50 - 1.50	07/08/2018
18076986	3CA2		2.50 - 2.50	07/08/2018
18076998	3CA3		0.50 - 0.50	07/08/2018
18076883	3CA3		1.00 - 1.00	07/08/2018
18076887	3CA3		1.50 - 1.50	07/08/2018
18076895	3CA4		0.50 - 0.50	07/08/2018
18076900	3CA4		1.00 - 1.00	07/08/2018
18076904	3CA4		1.50 - 1.50	07/08/2018
18076914	3CA5		0.50 - 0.50	07/08/2018
18076918	3CA5		1.00 - 1.00	07/08/2018
18076922	3CA5		1.50 - 1.50	07/08/2018
18076936	3CA6		0.50 - 0.50	07/08/2018
18076942	3CA6		1.50 - 1.50	07/08/2018
18076953	3CA7		0.50 - 0.50	07/08/2018
18076960	3CA7		1.50 - 1.50	07/08/2018
18076974	3CA1-V		2.30 - 2.30	07/08/2018
18076990	3CA2-V		2.90 - 2.90	07/08/2018
18076891	3CA3-V		2.00 - 2.00	07/08/2018
18076909	3CA4-V		2.20 - 2.20	07/08/2018
18076931	3CA5-V		1.80 - 1.80	07/08/2018
18076949	3CA6-V		2.20 - 2.20	07/08/2018
18076964	3CA7-V		2.20 - 2.20	07/08/2018

Maximum Sample/Coolbox Temperature (°C) : **9.8**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																			
			18076879			18076926			18076969			18076978			18076982			18076986			18076998	
			Customer Sample Reference																			
			3CA1			3CA1			3CA1			3CA2			3CA2			3CA2			3CA3	
			AGS Reference																			
			Depth (m)			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			0.50 - 0.50			1.50 - 1.50			2.50 - 2.50			0.50 - 0.50
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10		X						X						X						
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 26		X			X			X			X			X			X				
Anions by Kone (soil)	All	NDPs: 0 Tests: 10		X						X						X						
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10	X						X						X						X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 5	X						X												X	
CEN Readings	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 45	X	X		X	X		X	X		X	X		X	X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 26		X			X			X			X			X			X				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 26		X			X			X			X			X			X				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 26			X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X	

18076918	3CA5		1.00 - 1.00	1kg TUB	S			x						x		x		x			x				x
18076914	3CA5		0.50 - 0.50	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x					x					x				
				1kg TUB	S			x				x			x		x		x			x				x
18076904	3CA4		1.50 - 1.50	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x							x					x				
				1kg TUB	S			x							x		x		x			x				x
18076900	3CA4		1.00 - 1.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x					x					x				
				1kg TUB	S			x				x		x			x		x			x				x
18076895	3CA4		0.50 - 0.50	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x							x					x				
				1kg TUB	S			x							x		x		x			x				x
18076887	3CA3		1.50 - 1.50	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x					x					x				
				1kg TUB	S			x				x			x		x		x			x				x
18076883	3CA3		1.00 - 1.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x							x					x				
				1kg TUB	S			x							x		x		x			x				x
18076998	3CA3		0.50 - 0.50	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x					x					x				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18076879			18076926			18076969			18076978			18076982			18076986			18076998
Customer Sample Reference			3CA1			3CA1			3CA1			3CA2			3CA2			3CA2			3CA3
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			0.50 - 0.50			1.50 - 1.50			2.50 - 2.50			0.50 - 0.50
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 26		X			X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 26		X			X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X
pH	All	NDPs: 0 Tests: 26		X			X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 26		X			X			X			X			X			X		
Sample description	All	NDPs: 0 Tests: 26		X			X			X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 26		X			X			X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 10		X						X						X					
Total Sulphur	All	NDPs: 0 Tests: 10		X						X						X					
TPH CWG (W)	All	NDPs: 0 Tests: 19	X			X			X			X			X			X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 26		X			X			X			X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 26			X			X			X			X			X			X	

18076918	3CA5		1.00 - 1.00	1kg TUB	S	x			x		x						x		
18076914	3CA5		0.50 - 0.50	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x	
				1kg TUB	S	x			x		x						x		
18076904	3CA4		1.50 - 1.50	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
				1kg TUB	S	x			x		x						x		
18076900	3CA4		1.00 - 1.00	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x	
				1kg TUB	S	x			x		x						x		
18076895	3CA4		0.50 - 0.50	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
				1kg TUB	S	x			x		x						x		
18076887	3CA3		1.50 - 1.50	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x	
				1kg TUB	S	x			x		x						x		
18076883	3CA3		1.00 - 1.00	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x				x	
				1kg TUB	S	x			x		x						x		
18076998	3CA3		0.50 - 0.50	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18076918		18076922			18076936			18076942			18076953			18076960		18076974	
Customer Sample Reference			3CA5		3CA5			3CA6			3CA6			3CA7			3CA7		3CA1-V	
AGS Reference																				
Depth (m)			1.00 - 1.00		1.50 - 1.50			0.50 - 0.50			1.50 - 1.50			0.50 - 0.50			1.50 - 1.50		2.30 - 2.30	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10				X						X						X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 19			X			X			X			X			X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 26	X			X			X			X			X			X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 10				X						X						X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10			X						X						X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 5			X																
CEN Readings	All	NDPs: 0 Tests: 19			X			X			X			X			X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 45	X		X	X		X	X		X	X		X	X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 19			X			X			X			X			X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19			X			X			X			X			X				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 26	X			X			X			X			X			X		X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19			X			X			X			X			X				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 26	X			X			X			X			X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 26		X			X			X			X			X			X		X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 19			X			X			X			X			X				

| 18076964 | 3CA7-V | | 2.20 - 2.20 | 60g VOC (ALE215) | S | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18076918		18076922			18076936			18076942			18076953			18076960			18076974
Customer Sample Reference			3CA5		3CA5			3CA6			3CA6			3CA7			3CA7			3CA1-V
AGS Reference																				
Depth (m)			1.00 - 1.00		1.50 - 1.50			0.50 - 0.50			1.50 - 1.50			0.50 - 0.50			1.50 - 1.50			2.30 - 2.30
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 19			X			X			X			X			X				
Metals in solid samples by OES	All	NDPs: 0 Tests: 26	X			X			X			X			X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 26	X			X			X			X			X			X		X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 19			X			X			X			X			X				
pH	All	NDPs: 0 Tests: 26	X			X			X			X			X			X		X	
pH Value	All	NDPs: 0 Tests: 19			X			X			X			X			X				
Phenols by HPLC (S)	All	NDPs: 0 Tests: 26	X			X			X			X			X			X		X	
Sample description	All	NDPs: 0 Tests: 26	X			X			X			X			X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 26	X			X			X			X			X			X		X	
Total Sulphate	All	NDPs: 0 Tests: 10				X						X						X			
Total Sulphur	All	NDPs: 0 Tests: 10				X						X						X			
TPH CWG (W)	All	NDPs: 0 Tests: 19			X			X			X			X			X				
TPH CWG GC (S)	All	NDPs: 0 Tests: 26	X			X			X			X			X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 26		X			X			X			X			X			X			X

18076964	3CA7-V		2.20 - 2.20	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
18076949	3CA6-V		2.20 - 2.20	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
18076931	3CA5-V		1.80 - 1.80	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
18076909	3CA4-V		2.20 - 2.20	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
18076891	3CA3-V		2.00 - 2.00	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S
18076990	3CA2-V		2.90 - 2.90	60g VOC (ALE215)	S
				250g Amber Jar (ALE210)	S

| | | | |

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18076879	3CA1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
18076926	3CA1	1.00 - 1.00	Dark Brown	Sandy Loam	Concrete/Aggregate	Stones
18076969	3CA1	1.50 - 1.50	Dark Brown	Sandy Loam	Glass & Stones	Concrete/Aggregate
18076978	3CA2	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
18076982	3CA2	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Vegetation
18076986	3CA2	2.50 - 2.50	Dark Brown	Silt Loam	Stones	None
18076883	3CA3	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18076887	3CA3	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	Vegetation
18076998	3CA3	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18076895	3CA4	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18076900	3CA4	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18076904	3CA4	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	Vegetation
18076914	3CA5	0.50 - 0.50	Dark Brown	Silt Loam	Stones	Vegetation
18076918	3CA5	1.00 - 1.00	Black	Sandy Silt Loam	Stones	Vegetation
18076922	3CA5	1.50 - 1.50	Black	Sandy Silt Loam	Stones	Vegetation
18076936	3CA6	0.50 - 0.50	Dark Brown	Silt Loam	Stones	Vegetation
18076942	3CA6	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Brick
18076953	3CA7	0.50 - 0.50	Dark Brown	Silt Loam	Stones	Vegetation
18076960	3CA7	1.50 - 1.50	Dark Brown	Silt Loam	Stones	Vegetation
18076974	3CA1-V	2.30 - 2.30	Grey	Silty Clay	Vegetation	None
18076990	3CA2-V	2.90 - 2.90	Dark Brown	Silt Loam	Vegetation	None
18076891	3CA3-V	2.00 - 2.00	Grey	Silt Loam	None	None
18076909	3CA4-V	2.20 - 2.20	Grey	Silty Clay	Vegetation	None
18076931	3CA5-V	1.80 - 1.80	Grey	Silt Loam	Stones	Vegetation
18076949	3CA6-V	2.20 - 2.20	Grey	Silty Clay Loam	None	None
18076964	3CA7-V	2.20 - 2.20	Grey	Silty Clay Loam	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA1	3CA1	3CA1	3CA2	3CA2	3CA2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076879	18076926	18076969	18076978	18076982	18076986
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5.7	6	7.8	7.2	9.7	15
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0318 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0106 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0424 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.191		0.298		0.337	
Sulphate, Total potential	<0.06 %	TM132		0.573		0.894		1.01	
Soil Organic Matter (SOM)	<0.35 %	TM132		6.15 #	17.4 #	16.7 #	5.65 #	55.3 #	6.19 #
pH	1 pH Units	TM133		10.5 M	8.88 M	8.87 M	9.55 M	8.91 M	8.61 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.81 M	<1 M	<1 M	3.14 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.07 M	4.25 M	4.94 M	8.52 M	3.53 M	7.05 M
Cadmium	<0.02 mg/kg	TM181		0.114 M	<0.02 M	0.142 M	<0.02 M	0.0729 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		41.4 M	15.1 M	9.23 M	104 M	6.89 M	539 M
Copper	<1.4 mg/kg	TM181		15.3 M	13.5 M	13.2 M	17.7 M	10.2 M	15.2 M
Iron	<1000 mg/kg	TM181		45000 #	24100 #	15600 #	54800 #	8780 #	118000 #
Lead	<0.7 mg/kg	TM181		44.5 M	21.1 M	17.9 M	58.2 M	10.6 M	10.5 M
Manganese	<0.13 mg/kg	TM181		3730 M	2790 M	1890 M	10200 M	523 M	26200 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		12 M	8.52 M	11.8 M	16.4 M	6.33 M	14.7 M
Selenium	<1 mg/kg	TM181		1.2 #	1.44 #	1.5 #	2.99 #	<1 #	13.3 #
Vanadium	<0.2 mg/kg	TM181		67.4 #	20.2 #	20.9 #	149 #	17.1 #	454 #
Zinc	<1.9 mg/kg	TM181		191 M	86.3 M	113 M	289 M	67.8 M	47.2 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.295		0.681		0.243	
Calcium	<21 mg/kg	TM224		135000		114000		67000	
Magnesium	<8 mg/kg	TM224		40500		27600		22400	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.152 M		0.164 M		0.128 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #		0.0017 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #		<0.001 #			
Additional Asbestos Components (Using TM048)		TM304		None #		None #			
Analysts Comments		TM304		N/A		N/A			
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #		0.0017 #			

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA3	3CA3	3CA3	3CA4	3CA4	3CA4
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076998	18076883	18076887	18076895	18076900	18076904
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9	12	7.6	9.4	6	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.022 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.295		0.267		0.314	
Sulphate, Total potential	<0.06 %	TM132		0.885		0.801		0.942	
Soil Organic Matter (SOM)	<0.35 %	TM132		14.4 #	10.8 #	5.72 #	6.83 #	22.8 #	8.28 #
pH	1 pH Units	TM133		10.4 M	11 M	10.1 M	10.7 M	9.96 M	11.3 M
Cyanide, Total	<1 mg/kg	TM153		1.04 M	<1 M	1.17 M	<1 M	11 M	4.88 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.25 M	18.6 M	12.8 M	9.27 M	7.43 M	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.2 M	<0.2 M	1.2 M	0.211 M
Chromium	<0.9 mg/kg	TM181		72 M	81.4 M	92.1 M	143 M	200 M	584 M
Copper	<1.4 mg/kg	TM181		18.1 M	26.2 M	42 M	20.1 M	47.3 M	19 M
Iron	<1000 mg/kg	TM181		68000 #	72900 #	185000 #	85700 #	102000 #	109000 #
Lead	<0.7 mg/kg	TM181		24.6 M	55.8 M	88 M	59.5 M	91.7 M	55.9 M
Manganese	<0.13 mg/kg	TM181		7800 M	12700 M	9430 M	9510 M	33100 M	27600 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		17.3 M	32.5 M	39.9 M	16.7 M	14.6 M	12.7 M
Selenium	<1 mg/kg	TM181		1.89 #	4.2 #	<10 #	<10 #	12.6 #	15.5 #
Vanadium	<0.2 mg/kg	TM181		261 #	165 #	613 #	210 #	223 #	415 #
Zinc	<1.9 mg/kg	TM181		118 M	205 M	306 M	178 M	1050 M	227 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.364		0.25		0.346	
Calcium	<21 mg/kg	TM224		117000		121000		141000	
Magnesium	<8 mg/kg	TM224		11200		18100		11500	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.159 M		0.192 M		0.172 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #				<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #				<0.001 #	
Additional Asbestos Components (Using TM048)		TM304		None #				No #	
Analysts Comments		TM304		N/A				0	
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #				<0.001 #	

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA5	3CA5	3CA5	3CA6	3CA6	3CA7
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076914	18076918	18076922	18076936	18076942	18076953
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	9.4	6.5	5.7	10	9.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	17.9 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.0226 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.228		0.752		0.317	
Sulphate, Total potential	<0.06 %	TM132		0.684		2.26		0.951	
Soil Organic Matter (SOM)	<0.35 %	TM132		9.38 #	16.7 #	8.24 #	3.79 #	4.67 #	6.24 #
pH	1 pH Units	TM133		10.4 M	8.81 M	11.1 M	9.09 M	10.2 M	10.3 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	10 M	22.7 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.35 M	7.92 M	<6 M	6.29 M	6.77 M	9.54 M
Cadmium	<0.02 mg/kg	TM181		0.455 M	1.67 M	<0.2 M	<0.02 M	<0.02 M	0.381 M
Chromium	<0.9 mg/kg	TM181		155 M	168 M	385 M	167 M	235 M	147 M
Copper	<1.4 mg/kg	TM181		22.8 M	28.3 M	16.2 M	13.4 M	19.3 M	18.6 M
Iron	<1000 mg/kg	TM181		97500 #	113000 #	124000 #	80400 #	75900 #	72800 #
Lead	<0.7 mg/kg	TM181		88.7 M	99.8 M	23.3 M	29.7 M	48.3 M	63.9 M
Manganese	<0.13 mg/kg	TM181		11500 M	20800 M	21400 M	12300 M	14300 M	9310 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		22.6 M	17.3 M	2.07 M	9.68 M	12.8 M	17.6 M
Selenium	<1 mg/kg	TM181		<10 #	12 #	10.6 #	3.84 #	4.84 #	<10 #
Vanadium	<0.2 mg/kg	TM181		304 #	302 #	291 #	230 #	369 #	213 #
Zinc	<1.9 mg/kg	TM181		308 M	635 M	175 M	122 M	296 M	218 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.344		0.985		0.48	
Calcium	<21 mg/kg	TM224		128000		211000		137000	
Magnesium	<8 mg/kg	TM224		21900		16000		14100	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.17 M		0.162 M		0.239 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				0.0048 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				0.0109 #			
Additional Asbestos Components (Using TM048)		TM304				Fibres suspected to b #			
Analysts Comments		TM304				N/C			
Asbestos Quantification - Total - %	<0.001 %	TM304				0.0157 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	3CA7	3CA1-V	3CA2-V	3CA3-V	3CA4-V	3CA5-V
Depth (m)	1.50 - 1.50	2.30 - 2.30	2.90 - 2.90	2.00 - 2.00	2.20 - 2.20	1.80 - 1.80
Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
Lab Sample No.(s)	18076960	18076974	18076990	18076891	18076909	18076931
AGS Reference						

Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	8.7	33	33	23	23	28
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	67.5 M	92.6 M	187 M	76.1 M	25.7 M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132	0.211					
Sulphate, Total potential	<0.06 %	TM132	0.633					
Soil Organic Matter (SOM)	<0.35 %	TM132	5.72 #	5.24 #	5.9 #	1.36 #	1.43 #	6.62 #
pH	1 pH Units	TM133	10.5 M	7.28 M	7.67 M	8.23 M	7.76 M	8.26 M
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181	2.62 M	12.6 M	12.1 M	9.17 M	8.92 M	13.2 M
Cadmium	<0.02 mg/kg	TM181	<0.02 M	0.0351 M	0.101 M	<0.02 M	<0.02 M	0.347 M
Chromium	<0.9 mg/kg	TM181	112 M	34.3 M	34 M	34.2 M	36.7 M	24.8 M
Copper	<1.4 mg/kg	TM181	7.11 M	34.7 M	24.2 M	20.1 M	21.2 M	27.5 M
Iron	<1000 mg/kg	TM181	44100 #	20700 #	27500 #	24200 #	29500 #	28000 #
Lead	<0.7 mg/kg	TM181	10.4 M	37.3 M	40.1 M	22.9 M	20.9 M	45.3 M
Manganese	<0.13 mg/kg	TM181	9660 M	287 M	417 M	383 M	472 M	776 M
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181	5.46 M	27.1 M	28.7 M	36.6 M	37.4 M	29.3 M
Selenium	<1 mg/kg	TM181	3.92 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181	167 #	49.8 #	52.1 #	51.2 #	52.6 #	41.7 #
Zinc	<1.9 mg/kg	TM181	51.3 M	136 M	149 M	109 M	125 M	145 M
Sulphate, acid soluble (total)	<0.02 %	TM221	0.519					
Calcium	<21 mg/kg	TM224	194000					
Magnesium	<8 mg/kg	TM224	39500					
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243	0.148 M					

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA6-V	3CA7-V				
			Depth (m)	2.20 - 2.20	2.20 - 2.20				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	07/08/2018	07/08/2018				
			Sample Time	00:00	00:00				
			Date Received	08/08/2018	08/08/2018				
			SDG Ref	180808-58	180808-58				
			Lab Sample No.(s)	18076949	18076964				
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		24	20				
Exchangeable Ammonia as N	<12 mg/kg	TM024		160 M	149 M				
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Xylenols	<0.015 mg/kg	TM062 (S)		0.185 M	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.185 M	<0.035 M				
Soil Organic Matter (SOM)	<0.35 %	TM132		1.72 #	1.57 #				
pH	1 pH Units	TM133		7.85 M	7.92 M				
Cyanide, Total	<1 mg/kg	TM153		2.1 M	<1 M				
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M				
Arsenic	<0.6 mg/kg	TM181		8.64 M	10.8 M				
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M				
Chromium	<0.9 mg/kg	TM181		34.7 M	29.6 M				
Copper	<1.4 mg/kg	TM181		20.1 M	13.6 M				
Iron	<1000 mg/kg	TM181		21700 #	29400 #				
Lead	<0.7 mg/kg	TM181		21.1 M	21.3 M				
Manganese	<0.13 mg/kg	TM181		487 M	941 M				
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M				
Nickel	<0.2 mg/kg	TM181		33.4 M	29.9 M				
Selenium	<1 mg/kg	TM181		<1 #	<1 #				
Vanadium	<0.2 mg/kg	TM181		50.7 #	48 #				
Zinc	<1.9 mg/kg	TM181		123 M	90.2 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA1	3CA1	3CA1	3CA2	3CA2	3CA2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076879	18076926	18076969	18076978	18076982	18076986
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.7	96.3	65.6	71	89.5	96.1
Acenaphthene-d10 % recovery**	%	TM218		107	92	85	106	72.5	91.1
Phenanthrene-d10 % recovery**	%	TM218		100	118	98.4	98.9	76.5	84.7
Chrysene-d12 % recovery**	%	TM218		96.3	117	71.9	89.1	79.5	81.5
Perylene-d12 % recovery**	%	TM218		95.1	93.9	80.3	88.7	91	79.5
Naphthalene	<0.009 mg/kg	TM218		0.977 M	1.26 M	0.262 M	0.415 M	4.09 M	0.0563 M
Acenaphthylene	<0.012 mg/kg	TM218		0.89 M	1.49 M	0.41 M	0.429 M	15.6 M	0.382 M
Acenaphthene	<0.008 mg/kg	TM218		0.172 M	0.314 M	0.114 M	0.077 M	0.647 M	0.0213 M
Fluorene	<0.01 mg/kg	TM218		0.735 M	1.35 M	0.352 M	0.36 M	10.6 M	0.021 M
Phenanthrene	<0.015 mg/kg	TM218		5.67 M	14 M	3.3 M	2.15 M	103 M	0.141 M
Anthracene	<0.016 mg/kg	TM218		1.85 M	4.56 M	1.28 M	0.701 M	47.5 M	0.529 M
Fluoranthene	<0.017 mg/kg	TM218		9.66 M	21.7 M	5.49 M	2.73 M	241 M	2.41 M
Pyrene	<0.015 mg/kg	TM218		7.1 M	15.4 M	3.83 M	1.73 M	193 M	2.74 M
Benz(a)anthracene	<0.014 mg/kg	TM218		4.29 M	18.1 M	3.79 M	1.75 M	97.3 M	1.84 M
Chrysene	<0.01 mg/kg	TM218		4.26 M	17.5 M	3.64 M	1.56 M	95.4 M	2.42 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		6.51 M	24.8 M	6.12 M	2.03 M	139 M	3.6 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.28 M	10.2 M	2.33 M	0.533 M	46.1 M	1.11 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		4.01 M	13.3 M	4.77 M	1.49 M	96.9 M	2.44 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		2.78 M	9.88 M	3.12 M	0.862 M	102 M	2.09 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.736 M	3.14 M	1.03 M	0.231 M	18.1 M	0.369 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.98 M	10.1 M	3.08 M	1.04 M	76.2 M	2.01 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		54.9	167	42.9	18.1	1290	22.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA3	3CA3	3CA3	3CA4	3CA4	3CA4
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076998	18076883	18076887	18076895	18076900	18076904
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.2	93.2	93	91.2	91.7	91.3
Acenaphthene-d10 % recovery**	%	TM218		97.9	95	95	99.5	88.5	98
Phenanthrene-d10 % recovery**	%	TM218		94.1	88.3	101	104	95.1	98.9
Chrysene-d12 % recovery**	%	TM218		98.9	94.8	95.2	110	95.3	106
Perylene-d12 % recovery**	%	TM218		112	107	92.9	114	113	120
Naphthalene	<0.009 mg/kg	TM218		2.12 M	1.79 M	1.63 M	2.33 M	3.29 M	1.59 M
Acenaphthylene	<0.012 mg/kg	TM218		3.74 M	1.48 M	1.58 M	1.06 M	9.85 M	4.6 M
Acenaphthene	<0.008 mg/kg	TM218		0.557 M	0.137 M	0.129 M	0.185 M	0.393 M	0.215 M
Fluorene	<0.01 mg/kg	TM218		1.67 M	0.782 M	0.767 M	0.618 M	4.33 M	0.91 M
Phenanthrene	<0.015 mg/kg	TM218		13.4 M	5.63 M	5.88 M	3.86 M	38.5 M	7.47 M
Anthracene	<0.016 mg/kg	TM218		6.52 M	1.94 M	2.45 M	1.45 M	14.9 M	4.31 M
Fluoranthene	<0.017 mg/kg	TM218		48.2 M	12.2 M	18.4 M	8.17 M	110 M	32.7 M
Pyrene	<0.015 mg/kg	TM218		35.7 M	9.52 M	14.9 M	6.53 M	89 M	33.6 M
Benz(a)anthracene	<0.014 mg/kg	TM218		24 M	5.89 M	9.56 M	4.09 M	58.6 M	22.5 M
Chrysene	<0.01 mg/kg	TM218		23.4 M	5.16 M	8.9 M	3.91 M	54.5 M	22.7 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		37.8 M	8.59 M	12.9 M	6.25 M	72.4 M	48.8 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		12.9 M	3.19 M	4.16 M	2.46 M	28.2 M	11.7 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		23.3 M	6.06 M	8.29 M	4.12 M	54.2 M	28.3 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		15.9 M	5.47 M	6.98 M	2.75 M	42.8 M	19.2 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		5.32 M	1.2 M	1.7 M	0.896 M	11.7 M	6.23 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		18.1 M	4.27 M	6.08 M	3.19 M	37.7 M	22.8 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		273	73.3	104	51.9	630	268

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA5	3CA5	3CA5	3CA6	3CA6	3CA7
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076914	18076918	18076922	18076936	18076942	18076953
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.6	97.8	93	94.6	87.1	90
Acenaphthene-d10 % recovery**	%	TM218		98.1	96.3	94.8	92.8	89.4	90.5
Phenanthrene-d10 % recovery**	%	TM218		99.3	92.5	97.2	92.8	91.7	86.5
Chrysene-d12 % recovery**	%	TM218		103	97.4	90.9	86	95.4	92.1
Perylene-d12 % recovery**	%	TM218		109	108	88.8	87.5	95.5	96.6
Naphthalene	<0.009 mg/kg	TM218		1.52 M	2.9 M	0.148 M	0.384 M	2.34 M	1.24 M
Acenaphthylene	<0.012 mg/kg	TM218		0.962 M	5.32 M	0.0994 M	0.167 M	1.12 M	0.533 M
Acenaphthene	<0.008 mg/kg	TM218		0.138 M	0.263 M	0.08 M	0.0264 M	0.18 M	0.0894 M
Fluorene	<0.01 mg/kg	TM218		0.584 M	4.37 M	0.0818 M	0.0933 M	0.841 M	0.308 M
Phenanthrene	<0.015 mg/kg	TM218		4.22 M	29.9 M	0.895 M	0.617 M	4.88 M	1.85 M
Anthracene	<0.016 mg/kg	TM218		1.46 M	13.9 M	0.224 M	0.186 M	1.58 M	0.542 M
Fluoranthene	<0.017 mg/kg	TM218		8.98 M	59.3 M	2.3 M	1.24 M	8.55 M	3.5 M
Pyrene	<0.015 mg/kg	TM218		6.6 M	41.5 M	2.19 M	0.906 M	6.54 M	2.65 M
Benz(a)anthracene	<0.014 mg/kg	TM218		4.08 M	29.3 M	1.63 M	0.596 M	4.25 M	1.72 M
Chrysene	<0.01 mg/kg	TM218		3.75 M	27.1 M	1.81 M	0.582 M	3.75 M	1.5 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		6.01 M	40.9 M	2.74 M	0.946 M	5.58 M	2.44 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.22 M	16.2 M	1.14 M	0.324 M	2.2 M	0.778 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		3.74 M	26.4 M	1.95 M	0.584 M	3.65 M	1.66 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		2.53 M	25 M	1.27 M	0.58 M	2.36 M	1.59 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.839 M	5.8 M	0.343 M	0.0965 M	0.723 M	0.301 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.9 M	19.9 M	1.34 M	0.449 M	2.63 M	1.12 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		50.5	348	18.2	7.77	51.2	21.8

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA7	3CA1-V	3CA2-V	3CA3-V	3CA4-V	3CA5-V
			Depth (m)	1.50 - 1.50	2.30 - 2.30	2.90 - 2.90	2.00 - 2.00	2.20 - 2.20	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076960	18076974	18076990	18076891	18076909	18076931
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.9	91.7	92.3	87.8	90	99.2
Acenaphthene-d10 % recovery**	%	TM218		96.1	95	91.7	88	82.3	98.3
Phenanthrene-d10 % recovery**	%	TM218		98.5	94.6	83.1	93.2	85.2	99.8
Chrysene-d12 % recovery**	%	TM218		100	95.1	94.7	96.2	89.9	93.7
Perylene-d12 % recovery**	%	TM218		106	102	94.2	101	91	93.6
Naphthalene	<0.009 mg/kg	TM218		1.78 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M	0.0132 M
Acenaphthylene	<0.012 mg/kg	TM218		0.801 M	<0.012 M	<0.012 M	<0.012 M	0.0289 M	0.022 M
Acenaphthene	<0.008 mg/kg	TM218		0.135 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.705 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		3.93 M	0.0493 M	0.0651 M	0.0307 M	0.0533 M	0.108 M
Anthracene	<0.016 mg/kg	TM218		1.03 M	<0.016 M	<0.016 M	<0.016 M	0.0223 M	0.0274 M
Fluoranthene	<0.017 mg/kg	TM218		6.15 M	0.0866 M	0.114 M	0.118 M	0.169 M	0.394 M
Pyrene	<0.015 mg/kg	TM218		4.46 M	0.0756 M	0.102 M	0.0953 M	0.166 M	0.325 M
Benz(a)anthracene	<0.014 mg/kg	TM218		2.58 M	0.0414 M	0.0763 M	0.065 M	0.1 M	0.223 M
Chrysene	<0.01 mg/kg	TM218		2.33 M	0.0583 M	0.0886 M	0.0554 M	0.103 M	0.246 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		4.01 M	0.082 M	0.148 M	0.0985 M	0.19 M	0.356 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.5 M	<0.014 M	0.0521 M	0.0446 M	0.0631 M	0.118 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		2.37 M	0.0481 M	0.109 M	0.064 M	0.124 M	0.245 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.54 M	0.0316 M	0.109 M	0.0398 M	0.148 M	0.214 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.517 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	0.035 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.79 M	0.0413 M	0.0808 M	0.0479 M	0.103 M	0.146 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		35.6	0.514	0.945	0.659	1.27	2.47

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA6-V	3CA7-V				
			Depth (m)	2.20 - 2.20	2.20 - 2.20				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	07/08/2018	07/08/2018				
			Sample Time	00:00	00:00				
			Date Received	08/08/2018	08/08/2018				
			SDG Ref	180808-58	180808-58				
			Lab Sample No.(s)	18076949	18076964				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.5	88				
Acenaphthene-d10 % recovery**	%	TM218		87.7	84.1				
Phenanthrene-d10 % recovery**	%	TM218		85.9	87.5				
Chrysene-d12 % recovery**	%	TM218		79.4	83.7				
Perylene-d12 % recovery**	%	TM218		81	85.4				
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M				
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M				
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M				
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M				
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M				
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	<0.017 M				
Pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M				
Chrysene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M				
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M				
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M				
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M				
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M				
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	<0.118				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA1	3CA1	3CA1	3CA2	3CA2	3CA2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076879	18076926	18076969	18076978	18076982	18076986
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		66.8	44.3	48.1	62.3	37.2	112
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.349 #	<0.1 #	0.117 #	<0.1 #	<0.1 #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0286	0.0106	0.026	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0456	<0.01	0.0195	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.134	<0.01	0.0282	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.97	1.62	2.28	5.62	8.91	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		12.9	10.9	12.5	26	83.5	0.259
Aliphatics >C21-C35	<0.1 mg/kg	TM173		74.5	34.7	43.2	146	65.7	16.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		41.1	8.85	15.5	53.2	13.2	2.15
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		133	56.1	73.4	231	171	18.9
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0308	<0.01	0.013	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0891	<0.01	0.0184	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		5.43	9.65	70.7	3.92	31.7	0.287
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		39.9	98.2	418	23.5	442	3.92
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		146	432	755	118	1420	26.6
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		73.3	134	202	74	311	7.07
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		29.4	45.3	68.1	31.6	99.2	2.27
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		264	674	1450	219	2200	37.9
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		397	731	1520	449	2370	56.8

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA3	3CA3	3CA3	3CA4	3CA4	3CA4
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076998	18076883	18076887	18076895	18076900	18076904
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		50.3	72.9	58.5	62.5	36.1	74
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	<0.1 M	<0.1 #	<0.1 #	<0.1 #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0132	<0.01	<0.01	0.0121	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.27	2.28	2.96	2.34	4.95	9.14
Aliphatics >C16-C21	<0.1 mg/kg	TM173		25.9	13.3	14.6	13.4	37.1	23.9
Aliphatics >C21-C35	<0.1 mg/kg	TM173		89	51.7	65.1	51.2	66.5	47.9
Aliphatics >C35-C44	<0.1 mg/kg	TM173		40.7	15.2	19.4	16.4	16.2	11.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		159	82.6	102	83.3	125	92.8
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		13	5.28	6.87	5.01	19.5	6.54
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		154	45.9	66.5	33.7	324	81.3
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		500	161	241	109	1030	370
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		155	49.6	78.7	40.3	259	114
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		57.2	16.7	27.4	15.2	81.1	38.2
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		823	262	393	188	1630	572
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		981	344	495	272	1760	665

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA5	3CA5	3CA5	3CA6	3CA6	3CA7
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076914	18076918	18076922	18076936	18076942	18076953
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		60.7	58.7	72.7	67	70.6	76
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	0.112 #	<0.1 M	<0.1 #	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0136	0.0154	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0124	0.0143	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0249	0.0363	<0.01	<0.01	0.0134	0.0132
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.86	2.52	0.298	1.52	3.04	2.14
Aliphatics >C16-C21	<0.1 mg/kg	TM173		10.5	25	3	6.58	16.3	9.73
Aliphatics >C21-C35	<0.1 mg/kg	TM173		60.7	53.9	31.3	45	73.6	47.9
Aliphatics >C35-C44	<0.1 mg/kg	TM173		26.8	12.1	25.5	17.3	35	15.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		99.8	93.5	60.1	70.4	128	75.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0158	0.0242	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.68	16.8	1.03	2.2	6.09	4.39
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		27.8	236	7.03	12.2	37.1	30.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		104	701	54.3	54.4	151	85.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		43.8	185	51.6	27	64.2	29.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		15.7	59.5	26.3	10.5	26.2	10.5
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		180	1140	114	95.8	258	150
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		280	1230	174	166	386	226

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA7	3CA1-V	3CA2-V	3CA3-V	3CA4-V	3CA5-V
			Depth (m)	1.50 - 1.50	2.30 - 2.30	2.90 - 2.90	2.00 - 2.00	2.20 - 2.20	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076960	18076974	18076990	18076891	18076909	18076931
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		65.1	98	112	123	98	80.7
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.119 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0241	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0197	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.035	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.768	<0.1	<0.1	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		5.57	<0.1	<0.1	<0.1	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		25.4	1.04	8.52	1.58	1.2	3.86
Aliphatics >C35-C44	<0.1 mg/kg	TM173		6.18	<0.1	1.73	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		38	1.04	10.2	1.58	1.2	3.86
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0131	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.023	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.83	0.161	<0.1	<0.1	0.164	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		14.4	1.03	1.83	0.312	1.35	2.37
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		45.9	15.9	20.4	4.22	8.13	21.9
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		16.8	9.1	4.8	0.29	0.624	4.29
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		6.34	3.63	1.22	<0.1	<0.1	0.882
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		79.9	26.2	27	4.82	10.3	28.6
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		118	27.2	37.3	6.4	11.5	32.4

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA6-V	3CA7-V				
			Depth (m)	2.20 - 2.20	2.20 - 2.20				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	07/08/2018	07/08/2018				
			Sample Time	00:00	00:00				
			Date Received	08/08/2018	08/08/2018				
			SDG Ref	180808-58	180808-58				
			Lab Sample No.(s)	18076949	18076964				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		91.2	85.7				
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M				
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1				
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1				
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	<0.1				
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	<0.1				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	<0.1				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		3.99	3.02				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	1.95				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	0.763				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		3.99	4.97				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		3.99	4.97				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA1	3CA1	3CA1	3CA2	3CA2	3CA2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076879	18076926	18076969	18076978	18076982	18076986
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.5	97.3	98.6	99.7	99.2	102
Toluene-d8**	%	TM116		98.7	99.3	97.8	102	93.7	102
4-Bromofluorobenzene**	%	TM116		86.1	90.7	88.2	91.1	77.2	110
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.266 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA3	3CA3	3CA3	3CA4	3CA4	3CA4
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076998	18076883	18076887	18076895	18076900	18076904
			AGS Reference						
Dibromofluoromethane**	%	TM116		94.4	92.7	96.4	107	99	96.3
Toluene-d8**	%	TM116		95.9	94.2	97.1	97.1	98	97.6
4-Bromofluorobenzene**	%	TM116		83.2	81	88	89	87.9	91.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.362 M	0.53 M	0.302 M	0.247 M	0.211 M	0.245 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA5	3CA5	3CA5	3CA6	3CA6	3CA7
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076914	18076918	18076922	18076936	18076942	18076953
			AGS Reference						
Dibromofluoromethane**	%	TM116		95.7	93.8	105	101	99.3	109
Toluene-d8**	%	TM116		95.1	91.5	94.4	102	94.6	96
4-Bromofluorobenzene**	%	TM116		87.6	86.3	98.1	95.1	89.9	87.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.303 M	0.758 M	<0.13 M	<0.13 M	0.825 M	0.28 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA7	3CA1-V	3CA2-V	3CA3-V	3CA4-V	3CA5-V
			Depth (m)	1.50 - 1.50	2.30 - 2.30	2.90 - 2.90	2.00 - 2.00	2.20 - 2.20	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018	07/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018	08/08/2018
			SDG Ref	180808-58	180808-58	180808-58	180808-58	180808-58	180808-58
			Lab Sample No.(s)	18076960	18076974	18076990	18076891	18076909	18076931
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	101	105	113	104	101
Toluene-d8**	%	TM116		97.9	109	99.9	100	100	99.6
4-Bromofluorobenzene**	%	TM116		85.8	99.8	102	99.7	101	98.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.318 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CA6-V	3CA7-V				
			Depth (m)	2.20 - 2.20	2.20 - 2.20				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	07/08/2018	07/08/2018				
			Sample Time	00:00	00:00				
			Date Received	08/08/2018	08/08/2018				
			SDG Ref	180808-58	180808-58				
			Lab Sample No.(s)	18076949	18076964				
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	113				
Toluene-d8**	%	TM116		98.6	99.2				
4-Bromofluorobenzene**	%	TM116		98	97.4				
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M				
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M				
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M				
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #				
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M				
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4				

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA1 0.50 - 0.50 SOLID 07/08/2018 00:00:00 08/08/2018 20:18:59 180808-58 18076879 TM048	10/08/2018	Renata Bozhkov	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA1 1.50 - 1.50 SOLID 07/08/2018 00:00:00 08/08/2018 20:26:06 180808-58 18076969 TM048	10/08/2018	Renata Bozhkov	Soil containing ACM debris.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA2 1.50 - 1.50 SOLID 07/08/2018 00:00:00 08/08/2018 15:17:47 180808-58 18076982 TM048	10/08/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA3 0.50 - 0.50 SOLID 07/08/2018 00:00:00 08/08/2018 15:32:35 180808-58 18076998 TM048	10/08/2018	Renata Bozhkov	Loose fibres in soil.	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA3 1.50 - 1.50 SOLID 07/08/2018 00:00:00 08/08/2018 15:28:08 180808-58 18076887 TM048	10/08/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA4 1.00 - 1.00 SOLID 07/08/2018 00:00:00 08/08/2018 15:20:00 180808-58 18076900 TM048	09/08/2018	Renata Bozhkov	Loose fibres in soil.	Not Detected (#)	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 180808-58 **Client Reference:** **Report Number:** 468877
Location: Llanwern **Order Number:** LLA470 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA5 0.50 - 0.50 SOLID 07/08/2018 00:00:00 08/08/2018 15:51:28 180808-58 18076914 TM048	10/08/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA5 1.50 - 1.50 SOLID 07/08/2018 00:00:00 08/08/2018 16:38:44 180808-58 18076922 TM048	09/08/2018	Renata Bozhkov	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA6 1.50 - 1.50 SOLID 07/08/2018 00:00:00 08/08/2018 16:40:16 180808-58 18076942 TM048	10/08/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA7 1.50 - 1.50 SOLID 07/08/2018 00:00:00 08/08/2018 15:53:22 180808-58 18076960 TM048	10/08/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA1 0.50 - 0.50 SOLID 07/08/2018 00:00:00 08/08/2018 20:19:45 180808-58 18076879 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA1 1.50 - 1.50 SOLID 07/08/2018 00:00:00 08/08/2018 20:27:04 180808-58 18076969 TM304	None (#)	N/A	0.0017 (#)	<0.001 (#)	0.0017 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA3 0.50 - 0.50 SOLID 07/08/2018 00:00:00 08/08/2018 15:33:29 180808-58 18076998 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA4 1.00 - 1.00 SOLID 07/08/2018 00:00:00 08/08/2018 15:21:11 180808-58 18076900 TM304	No (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CA5 1.50 - 1.50 SOLID 07/08/2018 00:00:00 08/08/2018 16:39:12 180808-58 18076922 TM304	Fibres suspected to be Amphibole fibres detected on PCOM (#)	N/C	0.0048 (#)	0.0109 (#)	0.0157 (#)

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076879
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.455	<0.2	4.55	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00507	<0.0005	0.0507	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00127	<0.001	0.0127	<0.01	-	-	-
Copper	0.00882	<0.0003	0.0882	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00364	<0.003	0.0364	<0.03	-	-	-
Nickel	0.00129	<0.0004	0.0129	<0.004	-	-	-
Selenium	0.00355	<0.001	0.0355	<0.01	-	-	-
Vanadium	0.165	<0.001	1.65	<0.01	-	-	-
Zinc	0.246	<0.001	2.46	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000284	<0.00001	0.00284	<0.0001	-	-	-
Acenaphthene by GCMS	0.0001	<0.000005	0.001	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000178	<0.000005	0.00178	<0.00005	-	-	-
Fluoranthene by GCMS	0.000318	<0.000005	0.00318	<0.00005	-	-	-
Anthracene by GCMS	0.0000689	<0.000005	0.000689	<0.00005	-	-	-
Phenanthrene by GCMS	0.000355	<0.000005	0.00355	<0.00005	-	-	-
Fluorene by GCMS	0.0001	<0.000005	0.001	<0.00005	-	-	-
Chrysene by GCMS	0.0000942	<0.000005	0.000942	<0.00005	-	-	-
Pyrene by GCMS	0.000219	<0.000005	0.00219	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000835	<0.000005	0.000835	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000432	<0.000005	0.000432	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000059	<0.000002	0.00059	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000558	<0.000005	0.000558	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000394	<0.000005	0.000394	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00211	<0.000082	0.0211	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	9.02
Conductivity (µS/cm)	194.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

20/08/2018 10:29:15

10:28:29 20/08/2018

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076879
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	9.02
Conductivity (µS/cm)	194.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

20/08/2018 10:29:15

10:28:29 20/08/2018

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076883
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0022	<0.0005	0.022	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00137	<0.001	0.0137	<0.01	-	-	-
Copper	0.00668	<0.0003	0.0668	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00112	<0.0004	0.0112	<0.004	-	-	-
Selenium	0.00214	<0.001	0.0214	<0.01	-	-	-
Vanadium	0.097	<0.001	0.97	<0.01	-	-	-
Zinc	0.00259	<0.001	0.0259	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.207	<0.019	2.07	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000109	<0.00001	0.00109	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000621	<0.000005	0.0000621	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000958	<0.000005	0.000958	<0.00005	-	-	-
Anthracene by GCMS	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000614	<0.000005	0.000614	<0.00005	-	-	-
Fluorene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Chrysene by GCMS	0.0000133	<0.000005	0.000133	<0.00005	-	-	-
Pyrene by GCMS	0.0000969	<0.000005	0.000969	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000199	<0.000005	0.000199	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000156	<0.000005	0.000156	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000788	<0.000005	0.0000788	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000999	<0.000002	0.0000999	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000757	<0.000005	0.0000757	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000538	<0.000005	0.0000538	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000496	<0.000082	0.00496	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.59
Conductivity (µS/cm)	266.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

20/08/2018 10:29:15

10:28:29 20/08/2018

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076883
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.59
Conductivity (µS/cm)	266.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

20/08/2018 10:29:15

10:28:29 20/08/2018

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076887
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00415	<0.0005	0.0415	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00161	<0.001	0.0161	<0.01	-	-	-
Copper	0.00683	<0.0003	0.0683	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000803	<0.0004	0.00803	<0.004	-	-	-
Selenium	0.00303	<0.001	0.0303	<0.01	-	-	-
Vanadium	0.135	<0.001	1.35	<0.01	-	-	-
Zinc	0.00159	<0.001	0.0159	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000159	<0.00001	0.00159	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000188	<0.000005	0.000188	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000653	<0.000005	0.000653	<0.00005	-	-	-
Fluoranthene by GCMS	0.000278	<0.000005	0.00278	<0.00005	-	-	-
Anthracene by GCMS	0.0000477	<0.000005	0.000477	<0.00005	-	-	-
Phenanthrene by GCMS	0.000167	<0.000005	0.00167	<0.00005	-	-	-
Fluorene by GCMS	0.0000417	<0.000005	0.000417	<0.00005	-	-	-
Chrysene by GCMS	0.0000754	<0.000005	0.000754	<0.00005	-	-	-
Pyrene by GCMS	0.000213	<0.000005	0.00213	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000682	<0.000005	0.000682	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000717	<0.000005	0.000717	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000294	<0.000005	0.000294	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000047	<0.000002	0.00047	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000505	<0.000005	0.000505	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000341	<0.000005	0.000341	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00138	<0.000082	0.0138	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.21
Conductivity (µS/cm)	240.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076887
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.21
Conductivity (µS/cm)	240.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076895
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00213	<0.0005	0.0213	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00329	<0.001	0.0329	<0.01	-	-	-
Copper	0.00672	<0.0003	0.0672	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000895	<0.0004	0.00895	<0.004	-	-	-
Selenium	0.00219	<0.001	0.0219	<0.01	-	-	-
Vanadium	0.104	<0.001	1.04	<0.01	-	-	-
Zinc	0.00138	<0.001	0.0138	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000173	<0.00001	0.00173	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000369	<0.000005	0.000369	<0.00005	-	-	-
Fluoranthene by GCMS	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Anthracene by GCMS	0.0000257	<0.000005	0.000257	<0.00005	-	-	-
Phenanthrene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Fluorene by GCMS	0.0000302	<0.000005	0.000302	<0.00005	-	-	-
Chrysene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Pyrene by GCMS	0.000113	<0.000005	0.00113	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000258	<0.000005	0.000258	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000204	<0.000005	0.000204	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000802	<0.000005	0.0000802	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000121	<0.000002	0.000121	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000821	<0.000005	0.0000821	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000722	<0.000082	0.00722	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.38
Conductivity (µS/cm)	238.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076895
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.38
Conductivity (µS/cm)	238.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076900
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.154	<0.05	1.54	<0.5	-	-	-
Arsenic	0.00237	<0.0005	0.0237	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00378	<0.001	0.0378	<0.01	-	-	-
Copper	0.00704	<0.0003	0.0704	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00044	<0.0004	0.0044	<0.004	-	-	-
Selenium	0.00166	<0.001	0.0166	<0.01	-	-	-
Vanadium	0.0802	<0.001	0.802	<0.01	-	-	-
Zinc	0.0013	<0.001	0.013	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.631	<0.019	6.31	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000248	<0.00001	0.00248	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000324	<0.000005	0.000324	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000183	<0.000005	0.00183	<0.00005	-	-	-
Fluoranthene by GCMS	0.000844	<0.000005	0.00844	<0.00005	-	-	-
Anthracene by GCMS	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Phenanthrene by GCMS	0.000593	<0.000005	0.00593	<0.00005	-	-	-
Fluorene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Chrysene by GCMS	0.00015	<0.000005	0.0015	<0.00005	-	-	-
Pyrene by GCMS	0.000982	<0.000005	0.00982	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000128	<0.000005	0.00128	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000159	<0.000005	0.00159	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000649	<0.000005	0.000649	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000897	<0.000002	0.000897	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000181	<0.000005	0.000181	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000107	<0.000005	0.00107	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000657	<0.000005	0.000657	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00396	<0.000082	0.0396	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.25
Conductivity (µS/cm)	244.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076900
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.25
Conductivity (µS/cm)	244.00
Temperature (°C)	20.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076904
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA4
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.108	<0.05	1.08	<0.5	-	-	-
Arsenic	0.00141	<0.0005	0.0141	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00284	<0.001	0.0284	<0.01	-	-	-
Copper	0.00471	<0.0003	0.0471	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000515	<0.0004	0.00515	<0.004	-	-	-
Selenium	0.00166	<0.001	0.0166	<0.01	-	-	-
Vanadium	0.0819	<0.001	0.819	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.467	<0.019	4.67	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000288	<0.00001	0.000288	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000529	<0.000005	0.0000529	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000489	<0.000005	0.000489	<0.00005	-	-	-
Fluoranthene by GCMS	0.000851	<0.000005	0.00851	<0.00005	-	-	-
Anthracene by GCMS	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Phenanthrene by GCMS	0.000274	<0.000005	0.00274	<0.00005	-	-	-
Fluorene by GCMS	0.0000403	<0.000005	0.000403	<0.00005	-	-	-
Chrysene by GCMS	0.00013	<0.000005	0.0013	<0.00005	-	-	-
Pyrene by GCMS	0.00104	<0.000005	0.0104	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000552	<0.000005	0.000552	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000209	<0.000005	0.000209	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000268	<0.000002	0.000268	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000181	<0.000005	0.000181	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00276	<0.000082	0.0276	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.26
Conductivity (µS/cm)	243.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076904
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA4
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.26
Conductivity (µS/cm)	243.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076914
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00301	<0.0005	0.0301	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00149	<0.001	0.0149	<0.01	-	-	-
Copper	0.00411	<0.0003	0.0411	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00061	<0.0004	0.0061	<0.004	-	-	-
Selenium	0.00252	<0.001	0.0252	<0.01	-	-	-
Vanadium	0.112	<0.001	1.12	<0.01	-	-	-
Zinc	0.00281	<0.001	0.0281	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000107	<0.00001	0.00107	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000052	<0.000005	0.00052	<0.00005	-	-	-
Fluoranthene by GCMS	0.00018	<0.000005	0.0018	<0.00005	-	-	-
Anthracene by GCMS	0.0000308	<0.000005	0.000308	<0.00005	-	-	-
Phenanthrene by GCMS	0.00013	<0.000005	0.0013	<0.00005	-	-	-
Fluorene by GCMS	0.0000315	<0.000005	0.000315	<0.00005	-	-	-
Chrysene by GCMS	0.0000454	<0.000005	0.000454	<0.00005	-	-	-
Pyrene by GCMS	0.000176	<0.000005	0.00176	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000473	<0.000005	0.000473	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000563	<0.000005	0.000563	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000308	<0.000002	0.000308	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000593	<0.000005	0.0000593	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000284	<0.000005	0.000284	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000218	<0.000005	0.000218	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00098	<0.000082	0.0098	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.30
Conductivity (µS/cm)	239.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076914
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.30
Conductivity (µS/cm)	239.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076918
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.194	<0.05	1.94	<0.5	-	-	-
Arsenic	0.00574	<0.0005	0.0574	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00313	<0.001	0.0313	<0.01	-	-	-
Copper	0.00325	<0.0003	0.0325	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000517	<0.0004	0.00517	<0.004	-	-	-
Selenium	0.00327	<0.001	0.0327	<0.01	-	-	-
Vanadium	0.0713	<0.001	0.713	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.78	<0.019	7.8	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000501	<0.00001	0.00501	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000644	<0.000005	0.000644	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000479	<0.000005	0.00479	<0.00005	-	-	-
Fluoranthene by GCMS	0.00161	<0.000005	0.0161	<0.00005	-	-	-
Anthracene by GCMS	0.000347	<0.000005	0.00347	<0.00005	-	-	-
Phenanthrene by GCMS	0.00127	<0.000005	0.0127	<0.00005	-	-	-
Fluorene by GCMS	0.000416	<0.000005	0.00416	<0.00005	-	-	-
Chrysene by GCMS	0.000279	<0.000005	0.00279	<0.00005	-	-	-
Pyrene by GCMS	0.00111	<0.000005	0.0111	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000258	<0.000005	0.00258	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0004	<0.000005	0.004	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000138	<0.000005	0.00138	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000213	<0.000002	0.00213	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000575	<0.000005	0.000575	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000286	<0.000005	0.00286	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000226	<0.000005	0.00226	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00766	<0.000082	0.0766	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	9.20
Conductivity (µS/cm)	156.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076918
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	9.20
Conductivity (µS/cm)	156.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076922
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.063	<0.05	0.63	<0.5	-	-	-
Arsenic	0.000536	<0.0005	0.00536	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00328	<0.001	0.0328	<0.01	-	-	-
Copper	0.0016	<0.0003	0.016	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0815	<0.001	0.815	<0.01	-	-	-
Zinc	0.00412	<0.001	0.0412	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.354	<0.019	3.54	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000658	<0.00001	0.000658	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000135	<0.000005	0.000135	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000873	<0.000005	0.000873	<0.00005	-	-	-
Anthracene by GCMS	0.0000197	<0.000005	0.000197	<0.00005	-	-	-
Phenanthrene by GCMS	0.000078	<0.000005	0.00078	<0.00005	-	-	-
Fluorene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000826	<0.000005	0.000826	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000373	<0.000082	0.00373	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.86
Conductivity (µS/cm)	394.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076922
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.86
Conductivity (µS/cm)	394.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case				
SDG	180808-58			
Lab Sample Number(s)	18076926			
Sampled Date	07-Aug-2018			
Customer Sample Ref.	3CA1			
Depth (m)	1.00 - 1.00			

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00659	<0.0005	0.0659	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.001	<0.001	0.01	<0.01	-	-	-
Copper	0.00803	<0.0003	0.0803	<0.003	-	-	-
Lead	0.000292	<0.0002	0.00292	<0.002	-	-	-
Manganese	0.00322	<0.003	0.0322	<0.03	-	-	-
Nickel	0.000877	<0.0004	0.00877	<0.004	-	-	-
Selenium	0.00333	<0.001	0.0333	<0.01	-	-	-
Vanadium	0.0697	<0.001	0.697	<0.01	-	-	-
Zinc	0.00162	<0.001	0.0162	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.248	<0.019	2.48	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000657	<0.00001	0.000657	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000206	<0.000005	0.000206	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000254	<0.000005	0.000254	<0.00005	-	-	-
Fluoranthene by GCMS	0.000199	<0.000005	0.00199	<0.00005	-	-	-
Anthracene by GCMS	0.0000343	<0.000005	0.000343	<0.00005	-	-	-
Phenanthrene by GCMS	0.000138	<0.000005	0.00138	<0.00005	-	-	-
Fluorene by GCMS	0.0000264	<0.000005	0.000264	<0.00005	-	-	-
Chrysene by GCMS	0.0000897	<0.000005	0.000897	<0.00005	-	-	-
Pyrene by GCMS	0.000165	<0.000005	0.00165	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000827	<0.000005	0.000827	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000125	<0.000005	0.00125	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000655	<0.000005	0.000655	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000708	<0.000002	0.000708	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000601	<0.000005	0.000601	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00129	<0.000082	0.0129	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	8.69
Conductivity (µS/cm)	129.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

20/08/2018 10:29:15

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076926
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.01	<0.01	0.1	<0.1	-	-	-
Toluene by GC	0.005	<0.004	0.05	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	8.69
Conductivity (µS/cm)	129.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076936
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00473	<0.0005	0.0473	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00192	<0.001	0.0192	<0.01	-	-	-
Copper	0.00283	<0.0003	0.0283	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00049	<0.0004	0.0049	<0.004	-	-	-
Selenium	0.00254	<0.001	0.0254	<0.01	-	-	-
Vanadium	0.0584	<0.001	0.584	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000509	<0.00001	0.000509	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000659	<0.000005	0.0000659	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000541	<0.000005	0.000541	<0.00005	-	-	-
Anthracene by GCMS	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000364	<0.000005	0.000364	<0.00005	-	-	-
Fluorene by GCMS	0.00000966	<0.000005	0.0000966	<0.00005	-	-	-
Chrysene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Pyrene by GCMS	0.000043	<0.000005	0.00043	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000215	<0.000005	0.000215	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000249	<0.000005	0.000249	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000979	<0.000005	0.0000979	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000131	<0.000002	0.000131	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000796	<0.000005	0.0000796	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000329	<0.000082	0.00329	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	9.00
Conductivity (µS/cm)	153.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076936
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	9.00
Conductivity (µS/cm)	153.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076942
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA6
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00472	<0.0005	0.0472	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00162	<0.001	0.0162	<0.01	-	-	-
Copper	0.00825	<0.0003	0.0825	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00107	<0.0004	0.0107	<0.004	-	-	-
Selenium	0.00253	<0.001	0.0253	<0.01	-	-	-
Vanadium	0.127	<0.001	1.27	<0.01	-	-	-
Zinc	0.00101	<0.001	0.0101	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000613	<0.00001	0.000613	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000216	<0.000005	0.000216	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Fluoranthene by GCMS	0.000212	<0.000005	0.00212	<0.00005	-	-	-
Anthracene by GCMS	0.0000565	<0.000005	0.000565	<0.00005	-	-	-
Phenanthrene by GCMS	0.000254	<0.000005	0.00254	<0.00005	-	-	-
Fluorene by GCMS	0.0000704	<0.000005	0.000704	<0.00005	-	-	-
Chrysene by GCMS	0.0000422	<0.000005	0.000422	<0.00005	-	-	-
Pyrene by GCMS	0.000176	<0.000005	0.00176	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000048	<0.000005	0.00048	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000469	<0.000005	0.000469	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000184	<0.000005	0.000184	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000263	<0.000002	0.000263	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000529	<0.000005	0.0000529	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000232	<0.000005	0.000232	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0012	<0.000082	0.012	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	9.35
Conductivity (µS/cm)	208.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076942
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA6
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	9.35
Conductivity (µS/cm)	208.00
Temperature (°C)	20.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076953
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0037	<0.0005	0.037	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00156	<0.001	0.0156	<0.01	-	-	-
Copper	0.00619	<0.0003	0.0619	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000824	<0.0004	0.00824	<0.004	-	-	-
Selenium	0.00279	<0.001	0.0279	<0.01	-	-	-
Vanadium	0.108	<0.001	1.08	<0.01	-	-	-
Zinc	0.0012	<0.001	0.012	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.26	<0.019	2.6	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00019	<0.00001	0.0019	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000332	<0.000005	0.000332	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000601	<0.000005	0.000601	<0.00005	-	-	-
Fluoranthene by GCMS	0.000258	<0.000005	0.00258	<0.00005	-	-	-
Anthracene by GCMS	0.0000593	<0.000005	0.000593	<0.00005	-	-	-
Phenanthrene by GCMS	0.000216	<0.000005	0.00216	<0.00005	-	-	-
Fluorene by GCMS	0.0000676	<0.000005	0.000676	<0.00005	-	-	-
Chrysene by GCMS	0.00007	<0.000005	0.0007	<0.00005	-	-	-
Pyrene by GCMS	0.000218	<0.000005	0.00218	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000622	<0.000005	0.000622	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000689	<0.000005	0.000689	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000323	<0.000005	0.000323	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000381	<0.000002	0.000381	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000816	<0.000005	0.0000816	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000364	<0.000005	0.000364	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000255	<0.000005	0.000255	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00144	<0.000082	0.0144	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.27
Conductivity (µS/cm)	233.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076953
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.27
Conductivity (µS/cm)	233.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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10:28:29 20/08/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076960
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA7
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0044	<0.0005	0.044	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00119	<0.001	0.0119	<0.01	-	-	-
Copper	0.00778	<0.0003	0.0778	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00126	<0.0004	0.0126	<0.004	-	-	-
Selenium	0.00309	<0.001	0.0309	<0.01	-	-	-
Vanadium	0.138	<0.001	1.38	<0.01	-	-	-
Zinc	0.00156	<0.001	0.0156	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000222	<0.00001	0.00222	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000433	<0.000005	0.000433	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0001	<0.000005	0.001	<0.00005	-	-	-
Fluoranthene by GCMS	0.000222	<0.000005	0.00222	<0.00005	-	-	-
Anthracene by GCMS	0.0000507	<0.000005	0.000507	<0.00005	-	-	-
Phenanthrene by GCMS	0.000257	<0.000005	0.00257	<0.00005	-	-	-
Fluorene by GCMS	0.0000773	<0.000005	0.000773	<0.00005	-	-	-
Chrysene by GCMS	0.0000421	<0.000005	0.000421	<0.00005	-	-	-
Pyrene by GCMS	0.000182	<0.000005	0.00182	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000368	<0.000005	0.000368	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000038	<0.000005	0.00038	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000187	<0.000005	0.000187	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000199	<0.000002	0.000199	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000135	<0.000005	0.000135	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00134	<0.000082	0.0134	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.58
Conductivity (µS/cm)	272.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076960
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA7
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	10.58
Conductivity (µS/cm)	272.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076969
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA1
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00479	<0.0005	0.0479	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00208	<0.0003	0.0208	<0.003	-	-	-
Lead	0.000223	<0.0002	0.00223	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000438	<0.0004	0.00438	<0.004	-	-	-
Selenium	0.00284	<0.001	0.0284	<0.01	-	-	-
Vanadium	0.0215	<0.001	0.215	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.766	<0.019	7.66	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000307	<0.00001	0.000307	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000888	<0.000005	0.0000888	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000166	<0.000005	0.000166	<0.00005	-	-	-
Fluoranthene by GCMS	0.0001	<0.000005	0.001	<0.00005	-	-	-
Anthracene by GCMS	0.000021	<0.000005	0.00021	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000968	<0.000005	0.000968	<0.00005	-	-	-
Fluorene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Chrysene by GCMS	0.0000397	<0.000005	0.000397	<0.00005	-	-	-
Pyrene by GCMS	0.0000743	<0.000005	0.000743	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000457	<0.000005	0.000457	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000612	<0.000005	0.000612	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000247	<0.000005	0.000247	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000319	<0.000002	0.000319	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000757	<0.000005	0.0000757	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000435	<0.000005	0.000435	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000295	<0.000005	0.000295	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000647	<0.000082	0.00647	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	9.07
Conductivity (µS/cm)	124.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076969
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA1
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	0.004	<0.004	0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	9.07
Conductivity (µS/cm)	124.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076978
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00505	<0.0005	0.0505	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00122	<0.001	0.0122	<0.01	-	-	-
Copper	0.00395	<0.0003	0.0395	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000503	<0.0004	0.00503	<0.004	-	-	-
Selenium	0.00246	<0.001	0.0246	<0.01	-	-	-
Vanadium	0.113	<0.001	1.13	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00108	<0.00001	0.0108	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000181	<0.000005	0.000181	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000243	<0.000005	0.000243	<0.00005	-	-	-
Fluoranthene by GCMS	0.000129	<0.000005	0.00129	<0.00005	-	-	-
Anthracene by GCMS	0.0000254	<0.000005	0.000254	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000785	<0.000005	0.000785	<0.00005	-	-	-
Fluorene by GCMS	0.0000251	<0.000005	0.000251	<0.00005	-	-	-
Chrysene by GCMS	0.0000701	<0.000005	0.000701	<0.00005	-	-	-
Pyrene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000062	<0.000005	0.00062	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000865	<0.000005	0.000865	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000031	<0.000005	0.00031	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000447	<0.000002	0.000447	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000981	<0.000005	0.0000981	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000047	<0.000005	0.00047	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000352	<0.000005	0.000352	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00186	<0.000082	0.0186	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	9.06
Conductivity (µS/cm)	172.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076978
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	9.06
Conductivity (µS/cm)	172.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076982
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA2
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00394	<0.0005	0.0394	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00437	<0.0003	0.0437	<0.003	-	-	-
Lead	0.000365	<0.0002	0.00365	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000689	<0.0004	0.00689	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0152	<0.001	0.152	<0.01	-	-	-
Zinc	0.00294	<0.001	0.0294	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.78	<0.019	7.8	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000725	<0.00001	0.000725	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000172	<0.000005	0.00172	<0.00005	-	-	-
Fluoranthene by GCMS	0.00128	<0.000005	0.0128	<0.00005	-	-	-
Anthracene by GCMS	0.000171	<0.000005	0.00171	<0.00005	-	-	-
Phenanthrene by GCMS	0.000167	<0.000005	0.00167	<0.00005	-	-	-
Fluorene by GCMS	0.0000181	<0.000005	0.000181	<0.00005	-	-	-
Chrysene by GCMS	0.000539	<0.000005	0.00539	<0.00005	-	-	-
Pyrene by GCMS	0.00106	<0.000005	0.0106	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000441	<0.000005	0.00441	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000826	<0.000005	0.00826	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000371	<0.000005	0.00371	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000563	<0.000002	0.00563	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000835	<0.000005	0.00835	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000463	<0.000005	0.00463	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00709	<0.000082	0.0709	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	8.19
Conductivity (µS/cm)	93.40
Temperature (°C)	20.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076982
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA2
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.029	<0.01	0.29	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.039	<0.01	0.39	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.041	<0.01	0.41	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	8.19
Conductivity (µS/cm)	93.40
Temperature (°C)	20.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076986
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA2
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00228	<0.0005	0.0228	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00186	<0.0003	0.0186	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0112	<0.001	0.112	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.199	<0.019	1.99	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000984	<0.000005	0.0000984	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	10-Aug-2018
pH (pH Units)	8.59
Conductivity (µS/cm)	131.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076986
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA2
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	10-Aug-2018
pH (pH Units)	8.59
Conductivity (µS/cm)	131.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076998
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00508	<0.0005	0.0508	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0013	<0.001	0.013	<0.01	-	-	-
Copper	0.00432	<0.0003	0.0432	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000574	<0.0004	0.00574	<0.004	-	-	-
Selenium	0.00238	<0.001	0.0238	<0.01	-	-	-
Vanadium	0.125	<0.001	1.25	<0.01	-	-	-
Zinc	0.00227	<0.001	0.0227	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.218	<0.019	2.18	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000211	<0.00001	0.00211	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000167	<0.000005	0.00167	<0.00005	-	-	-
Fluoranthene by GCMS	0.000594	<0.000005	0.00594	<0.00005	-	-	-
Anthracene by GCMS	0.0000936	<0.000005	0.000936	<0.00005	-	-	-
Phenanthrene by GCMS	0.000312	<0.000005	0.00312	<0.00005	-	-	-
Fluorene by GCMS	0.0000878	<0.000005	0.000878	<0.00005	-	-	-
Chrysene by GCMS	0.000194	<0.000005	0.00194	<0.00005	-	-	-
Pyrene by GCMS	0.00047	<0.000005	0.0047	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000197	<0.000005	0.00197	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000301	<0.000005	0.00301	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000114	<0.000005	0.00114	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000167	<0.000002	0.00167	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000035	<0.000005	0.00035	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000188	<0.000005	0.00188	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000127	<0.000005	0.00127	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00329	<0.000082	0.0329	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	9.15
Conductivity (µS/cm)	192.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	180808-58
Lab Sample Number(s)	18076998
Sampled Date	07-Aug-2018
Customer Sample Ref.	3CA3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	09-Aug-2018
pH (pH Units)	9.15
Conductivity (µS/cm)	192.00
Temperature (°C)	21.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

20/08/2018 10:29:15

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CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	18076879	18076926	18076969	18076978	18076982	18076986	18076883	18076887	18076998	18076895
Customer Sample Ref.	3CA1	3CA1	3CA1	3CA2	3CA2	3CA2	3CA3	3CA3	3CA3	3CA4
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	2.50 - 2.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	14-Aug-2018		14-Aug-2018		14-Aug-2018			14-Aug-2018	14-Aug-2018	
Ammoniacal Nitrogen	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	13-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018
Ammonium Soil by Titration	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018	09-Aug-2018
Anions by Kone (soil)	10-Aug-2018		13-Aug-2018		10-Aug-2018			10-Aug-2018	10-Aug-2018	
Asbestos ID in Solid Samples	10-Aug-2018		10-Aug-2018		10-Aug-2018			10-Aug-2018	10-Aug-2018	
Asbestos Quantification - Full	13-Aug-2018		13-Aug-2018						13-Aug-2018	
CEN 10:1 Leachate (1 Stage)	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018
CEN Readings	14-Aug-2018	14-Aug-2018	13-Aug-2018	14-Aug-2018	14-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	14-Aug-2018	13-Aug-2018
Cyanide Comp/Free/Total/Thiocyanate	16-Aug-2018	16-Aug-2018	20-Aug-2018	16-Aug-2018	20-Aug-2018	16-Aug-2018	16-Aug-2018	20-Aug-2018	20-Aug-2018	16-Aug-2018
Dissolved Metals by ICP-MS	15-Aug-2018	15-Aug-2018	15-Aug-2018	14-Aug-2018	15-Aug-2018	14-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	14-Aug-2018
EPH CWG (Aliphatic) Aqueous GC (W)	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	15-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018
EPH CWG (Aliphatic) GC (S)	10-Aug-2018	10-Aug-2018	10-Aug-2018	14-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	14-Aug-2018	10-Aug-2018	10-Aug-2018
EPH CWG (Aromatic) Aqueous GC (W)	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	15-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018
EPH CWG (Aromatic) GC (S)	10-Aug-2018	10-Aug-2018	13-Aug-2018	14-Aug-2018	13-Aug-2018	10-Aug-2018	10-Aug-2018	14-Aug-2018	10-Aug-2018	10-Aug-2018
GRO by GC-FID (S)	15-Aug-2018	15-Aug-2018	16-Aug-2018	15-Aug-2018	15-Aug-2018	14-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	16-Aug-2018
GRO by GC-FID (W)	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	12-Aug-2018	15-Aug-2018	14-Aug-2018	12-Aug-2018	12-Aug-2018	14-Aug-2018
Mercury Dissolved	13-Aug-2018	15-Aug-2018	13-Aug-2018	14-Aug-2018	13-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	13-Aug-2018	15-Aug-2018
Metals in solid samples by OES	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018
PAH by GCMS	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	14-Aug-2018	14-Aug-2018	15-Aug-2018	13-Aug-2018	13-Aug-2018
PAH Spec MS - Aqueous (W)	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	15-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018
pH	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	13-Aug-2018
pH Value	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018
Phenols by HPLC (S)	10-Aug-2018	10-Aug-2018	10-Aug-2018	13-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	13-Aug-2018	10-Aug-2018	10-Aug-2018
Sample description	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018
Total Organic Carbon	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018
Total Sulphate	14-Aug-2018		14-Aug-2018		14-Aug-2018			14-Aug-2018	14-Aug-2018	
Total Sulphur	14-Aug-2018		12-Aug-2018		14-Aug-2018			12-Aug-2018	14-Aug-2018	
TPH CWG (W)	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	15-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018
TPH CWG GC (S)	15-Aug-2018	15-Aug-2018	16-Aug-2018	15-Aug-2018	15-Aug-2018	14-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	16-Aug-2018
VOC MS (S)	13-Aug-2018	13-Aug-2018	15-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018

Lab Sample No(s)	18076900	18076904	18076914	18076918	18076922	18076936	18076942	18076953	18076960	18076974
Customer Sample Ref.	3CA4	3CA4	3CA5	3CA5	3CA5	3CA6	3CA6	3CA7	3CA7	3CA1-V
AGS Ref.										
Depth	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50	2.30 - 2.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	14-Aug-2018		14-Aug-2018		14-Aug-2018		14-Aug-2018		14-Aug-2018	
Ammoniacal Nitrogen	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	
Ammonium Soil by Titration	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018	09-Aug-2018
Anions by Kone (soil)	10-Aug-2018		10-Aug-2018		10-Aug-2018		10-Aug-2018		10-Aug-2018	
Asbestos ID in Solid Samples	09-Aug-2018		10-Aug-2018		09-Aug-2018		10-Aug-2018		10-Aug-2018	
Asbestos Quantification - Full	09-Aug-2018				13-Aug-2018					
CEN 10:1 Leachate (1 Stage)	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	13-Aug-2018	09-Aug-2018	09-Aug-2018	
CEN Readings	13-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	13-Aug-2018	14-Aug-2018	14-Aug-2018	13-Aug-2018	13-Aug-2018	
Cyanide Comp/Free/Total/Thiocyanate	16-Aug-2018	16-Aug-2018	20-Aug-2018	20-Aug-2018	16-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	15-Aug-2018
Dissolved Metals by ICP-MS	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	14-Aug-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	
EPH CWG (Aliphatic) GC (S)	10-Aug-2018	14-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	14-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	14-Aug-2018
EPH CWG (Aromatic) Aqueous GC (W)	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	
EPH CWG (Aromatic) GC (S)	13-Aug-2018	14-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	14-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	14-Aug-2018
GRO by GC-FID (S)	15-Aug-2018	14-Aug-2018	15-Aug-2018	15-Aug-2018	14-Aug-2018	15-Aug-2018	15-Aug-2018	16-Aug-2018	16-Aug-2018	14-Aug-2018
GRO by GC-FID (W)	14-Aug-2018	13-Aug-2018	14-Aug-2018	14-Aug-2018	13-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	13-Aug-2018	
Mercury Dissolved	13-Aug-2018	14-Aug-2018	13-Aug-2018	15-Aug-2018	14-Aug-2018	13-Aug-2018	14-Aug-2018	13-Aug-2018	14-Aug-2018	
Metals in solid samples by OES	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018
PAH by GCMS	14-Aug-2018	13-Aug-2018	13-Aug-2018	14-Aug-2018	13-Aug-2018	13-Aug-2018	15-Aug-2018	14-Aug-2018	13-Aug-2018	13-Aug-2018
PAH Spec MS - Aqueous (W)	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	
pH	09-Aug-2018	09-Aug-2018	09-Aug-2018	13-Aug-2018	10-Aug-2018	13-Aug-2018	09-Aug-2018	13-Aug-2018	10-Aug-2018	13-Aug-2018
pH Value	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	
Phenols by HPLC (S)	10-Aug-2018	10-Aug-2018	10-Aug-2018	13-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018
Sample description	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018
Total Organic Carbon	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018
Total Sulphate	14-Aug-2018		14-Aug-2018		14-Aug-2018		14-Aug-2018		14-Aug-2018	
Total Sulphur	12-Aug-2018		14-Aug-2018		14-Aug-2018		14-Aug-2018		14-Aug-2018	
TPH CWG (W)	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	
TPH CWG GC (S)	15-Aug-2018	14-Aug-2018	15-Aug-2018	15-Aug-2018	14-Aug-2018	15-Aug-2018	15-Aug-2018	16-Aug-2018	16-Aug-2018	14-Aug-2018
VOC MS (S)	14-Aug-2018	13-Aug-2018	14-Aug-2018	13-Aug-2018	14-Aug-2018	13-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	13-Aug-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	180808-58	**Client Reference:**		**Report Number:**	468877
Location:	Llanwern	**Order Number:**	LLA470	**Superseded Report:**	

Lab Sample No(s)	18076990	18076891	18076909	18076931	18076949	18076964
Customer Sample Ref.	3CA2-V	3CA3-V	3CA4-V	3CA5-V	3CA6-V	3CA7-V
AGS Ref.						
Depth	2.90 - 2.90	2.00 - 2.00	2.20 - 2.20	1.80 - 1.80	2.20 - 2.20	2.20 - 2.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	09-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018	10-Aug-2018	09-Aug-2018
Cyanide Comp/Free/Total/Thiocyanate	14-Aug-2018	20-Aug-2018	15-Aug-2018	15-Aug-2018	20-Aug-2018	15-Aug-2018
EPH CWG (Aliphatic) GC (S)	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	14-Aug-2018
EPH CWG (Aromatic) GC (S)	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	10-Aug-2018	14-Aug-2018
GRO by GC-FID (S)	14-Aug-2018	15-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	15-Aug-2018
Metals in solid samples by OES	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018
PAH by GCMS	14-Aug-2018	13-Aug-2018	14-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018
pH	09-Aug-2018	09-Aug-2018	13-Aug-2018	09-Aug-2018	09-Aug-2018	09-Aug-2018
Phenols by HPLC (S)	13-Aug-2018	13-Aug-2018	10-Aug-2018	10-Aug-2018	13-Aug-2018	13-Aug-2018
Sample description	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018	08-Aug-2018
Total Organic Carbon	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018	13-Aug-2018
TPH CWG GC (S)	14-Aug-2018	15-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	15-Aug-2018
VOC MS (S)	13-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Deeside
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Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

PRELIMINARY/INTERIM REPORT

Date:	22 August 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180814-70
Your Reference:	
Location:	Llanwern
Report No:	469236

We received 30 samples on Tuesday August 14, 2018 and 30 of these samples were scheduled for analysis which was completed on Wednesday August 22, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

This is a preliminary report which has not had final authorisation.

Approved By:

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18112775	3CB2		1.00 - 1.00	13/08/2018
18112782	3CB2		2.20 - 2.20	13/08/2018
18112786	3CB2		2.80 - 2.80	13/08/2018
18112793	3CB2-V		3.00 - 3.00	13/08/2018
18112799	3CC2		1.00 - 1.00	13/08/2018
18112656	3CC2-V		1.50 - 1.50	13/08/2018
18112661	3CD2		1.00 - 1.00	13/08/2018
18112670	3CD2		2.00 - 2.00	13/08/2018
18112676	3CD2-V		2.90 - 2.90	13/08/2018
18112683	3CE2		0.50 - 0.50	13/08/2018
18112687	3CE2		1.00 - 1.00	13/08/2018
18112693	3CE2-V		1.60 - 1.60	13/08/2018
18112697	3CF2		0.50 - 0.50	13/08/2018
18112701	3CF2		1.00 - 1.00	13/08/2018
18112710	3CF2-V		1.50 - 1.50	13/08/2018
18112715	3CG2		0.50 - 0.50	13/08/2018
18112721	3CG2		0.90 - 0.90	13/08/2018
18112733	3CG2-V		1.10 - 1.10	13/08/2018
18112759	3CH6		0.50 - 0.50	13/08/2018
18112771	3CH6-V		0.80 - 0.80	13/08/2018
18112747	3CJ5		0.50 - 0.50	13/08/2018
18112751	3CJ5		1.20 - 1.20	13/08/2018
18112755	3CJ5		1.90 - 1.90	13/08/2018
18112763	3CJ5		2.20 - 2.20	13/08/2018
18112652	3CJ6		0.30 - 0.30	13/08/2018
18112666	3CJ6		0.60 - 0.60	13/08/2018
18112726	3CJ6		1.10 - 1.10	13/08/2018
18112738	3CJ6		2.00 - 2.00	13/08/2018
18112705	3CJ5-V		2.30 - 2.30	13/08/2018
18112743	3CJ6-V		2.30 - 2.30	13/08/2018

Maximum Sample/Coolbox Temperature (°C) : **18.6**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Preliminary

PRELIMINARY/INTERIM REPORT

SDG: 180814-70 **Client Reference:** **Report Number:** 469236
Location: Llanwern **Order Number:** LLA472 **Superseded Report:**

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	18112775			18112782			18112786			18112793			18112799			18112656			18112661		
			Customer Sample Reference	3CB2			3CB2			3CB2			3CB2-V			3CC2			3CC2-V			3CD2		
			AGS Reference																					
			Depth (m)	1.00 - 1.00			2.20 - 2.20			2.80 - 2.80			3.00 - 3.00			1.00 - 1.00			1.50 - 1.50			1.00 - 1.00		
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 11						X									X							
Ammonium Low	All	NDPs: 0 Tests: 21	X			X			X						X					X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 30		X			X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 11						X									X							
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 11				X									X									
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1				X																		
Calorific Value (S)*	All	NDPs: 0 Tests: 6								X														
CEN Readings	All	NDPs: 0 Tests: 21	X			X			X						X					X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 51	X	X		X	X		X	X		X			X	X		X		X	X			
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 21	X			X			X						X					X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 21	X			X			X						X					X				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 30		X			X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 21	X			X			X						X					X				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 30		X			X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 30			X			X			X			X			X			X				X

18112710	3CF2-V		1.50 - 1.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x							x			x		x		
18112701	3CF2		1.00 - 1.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S	x		x	x						x			x		x		
				1kg TUB	S		x			x			x	x	x	x			x			
18112697	3CF2		0.50 - 0.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x							x			x		x		
				1kg TUB	S		x						x	x	x	x			x			
18112693	3CE2-V		1.60 - 1.60	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x							x			x		x		
18112687	3CE2		1.00 - 1.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S	x		x	x			x			x			x		x		
				1kg TUB	S		x			x			x	x	x	x			x			
18112683	3CE2		0.50 - 0.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x							x			x		x		
				1kg TUB	S		x						x	x	x	x			x			
18112676	3CD2-V		2.90 - 2.90	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x							x			x		x		
18112670	3CD2		2.00 - 2.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S	x		x	x			x			x			x		x		
				1kg TUB	S		x			x			x	x	x	x			x			

Preliminary

PRELIMINARY/INTERIM REPORT

SDG: 180814-70 **Client Reference:** **Report Number:** 469236
Location: Llanwern **Order Number:** LLA472 **Superseded Report:**

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
GRO by GC-FID (W)	All	NDPs: 0 Tests: 21	18112775	3CB2		1.00 - 1.00	1kg TUB	S
			18112782	3CB2		2.20 - 2.20	1kg TUB	S
			18112786	3CB2		2.80 - 2.80	1kg TUB	S
			18112793	3CB2-V		3.00 - 3.00	1kg TUB	S
			18112799	3CC2		1.00 - 1.00	1kg TUB	S
			18112656	3CC2-V		1.50 - 1.50	1kg TUB	S
			18112661	3CD2		1.00 - 1.00	1kg TUB	S
Mercury Dissolved	All	NDPs: 0 Tests: 21	18112775	3CB2		1.00 - 1.00	1kg TUB	S
			18112782	3CB2		2.20 - 2.20	1kg TUB	S
			18112786	3CB2		2.80 - 2.80	1kg TUB	S
			18112793	3CB2-V		3.00 - 3.00	1kg TUB	S
			18112799	3CC2		1.00 - 1.00	1kg TUB	S
			18112656	3CC2-V		1.50 - 1.50	1kg TUB	S
			18112661	3CD2		1.00 - 1.00	1kg TUB	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 30	18112775	3CB2		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18112782	3CB2		2.20 - 2.20	250g Amber Jar (ALE210)	S
			18112786	3CB2		2.80 - 2.80	250g Amber Jar (ALE210)	S
			18112793	3CB2-V		3.00 - 3.00	250g Amber Jar (ALE210)	S
			18112799	3CC2		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18112656	3CC2-V		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18112661	3CD2		1.00 - 1.00	250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 30	18112775	3CB2		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18112782	3CB2		2.20 - 2.20	250g Amber Jar (ALE210)	S
			18112786	3CB2		2.80 - 2.80	250g Amber Jar (ALE210)	S
			18112793	3CB2-V		3.00 - 3.00	250g Amber Jar (ALE210)	S
			18112799	3CC2		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18112656	3CC2-V		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18112661	3CD2		1.00 - 1.00	250g Amber Jar (ALE210)	S
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 21	18112775	3CB2		1.00 - 1.00	1kg TUB	S
			18112782	3CB2		2.20 - 2.20	1kg TUB	S
			18112786	3CB2		2.80 - 2.80	1kg TUB	S
			18112793	3CB2-V		3.00 - 3.00	1kg TUB	S
			18112799	3CC2		1.00 - 1.00	1kg TUB	S
			18112656	3CC2-V		1.50 - 1.50	1kg TUB	S
			18112661	3CD2		1.00 - 1.00	1kg TUB	S
pH	All	NDPs: 0 Tests: 30	18112775	3CB2		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18112782	3CB2		2.20 - 2.20	250g Amber Jar (ALE210)	S
			18112786	3CB2		2.80 - 2.80	250g Amber Jar (ALE210)	S
			18112793	3CB2-V		3.00 - 3.00	250g Amber Jar (ALE210)	S
			18112799	3CC2		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18112656	3CC2-V		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18112661	3CD2		1.00 - 1.00	250g Amber Jar (ALE210)	S
pH Value of Filtered Water	All	NDPs: 0 Tests: 21	18112775	3CB2		1.00 - 1.00	1kg TUB	S
			18112782	3CB2		2.20 - 2.20	1kg TUB	S
			18112786	3CB2		2.80 - 2.80	1kg TUB	S
			18112793	3CB2-V		3.00 - 3.00	1kg TUB	S
			18112799	3CC2		1.00 - 1.00	1kg TUB	S
			18112656	3CC2-V		1.50 - 1.50	1kg TUB	S
			18112661	3CD2		1.00 - 1.00	1kg TUB	S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 30	18112775	3CB2		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18112782	3CB2		2.20 - 2.20	250g Amber Jar (ALE210)	S
			18112786	3CB2		2.80 - 2.80	250g Amber Jar (ALE210)	S
			18112793	3CB2-V		3.00 - 3.00	250g Amber Jar (ALE210)	S
			18112799	3CC2		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18112656	3CC2-V		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18112661	3CD2		1.00 - 1.00	250g Amber Jar (ALE210)	S
Sample description	All	NDPs: 0 Tests: 30	18112775	3CB2		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18112782	3CB2		2.20 - 2.20	250g Amber Jar (ALE210)	S
			18112786	3CB2		2.80 - 2.80	250g Amber Jar (ALE210)	S
			18112793	3CB2-V		3.00 - 3.00	250g Amber Jar (ALE210)	S
			18112799	3CC2		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18112656	3CC2-V		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18112661	3CD2		1.00 - 1.00	250g Amber Jar (ALE210)	S
Total Organic Carbon	All	NDPs: 0 Tests: 30	18112775	3CB2		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18112782	3CB2		2.20 - 2.20	250g Amber Jar (ALE210)	S
			18112786	3CB2		2.80 - 2.80	250g Amber Jar (ALE210)	S
			18112793	3CB2-V		3.00 - 3.00	250g Amber Jar (ALE210)	S
			18112799	3CC2		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18112656	3CC2-V		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18112661	3CD2		1.00 - 1.00	250g Amber Jar (ALE210)	S
Total Sulphate	All	NDPs: 0 Tests: 11	18112782	3CB2		2.20 - 2.20	250g Amber Jar (ALE210)	S
			18112799	3CC2		1.00 - 1.00	250g Amber Jar (ALE210)	S
Total Sulphur	All	NDPs: 0 Tests: 11	18112782	3CB2		2.20 - 2.20	250g Amber Jar (ALE210)	S
			18112799	3CC2		1.00 - 1.00	250g Amber Jar (ALE210)	S
TPH CWG (W)	All	NDPs: 0 Tests: 21	18112775	3CB2		1.00 - 1.00	1kg TUB	S
			18112782	3CB2		2.20 - 2.20	1kg TUB	S
			18112786	3CB2		2.80 - 2.80	1kg TUB	S
			18112793	3CB2-V		3.00 - 3.00	1kg TUB	S
			18112799	3CC2		1.00 - 1.00	1kg TUB	S
			18112656	3CC2-V		1.50 - 1.50	1kg TUB	S
			18112661	3CD2		1.00 - 1.00	1kg TUB	S
TPH CWG GC (S)	All	NDPs: 0 Tests: 30	18112775	3CB2		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18112782	3CB2		2.20 - 2.20	250g Amber Jar (ALE210)	S
			18112786	3CB2		2.80 - 2.80	250g Amber Jar (ALE210)	S
			18112793	3CB2-V		3.00 - 3.00	250g Amber Jar (ALE210)	S
			18112799	3CC2		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18112656	3CC2-V		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18112661	3CD2		1.00 - 1.00	250g Amber Jar (ALE210)	S
VOC MS (S)	All	NDPs: 0 Tests: 30	18112775	3CB2		1.00 - 1.00	60g VOC (ALE215)	S
			18112782	3CB2		2.20 - 2.20	60g VOC (ALE215)	S
			18112786	3CB2		2.80 - 2.80	60g VOC (ALE215)	S
			18112793	3CB2-V		3.00 - 3.00	60g VOC (ALE215)	S
			18112799	3CC2		1.00 - 1.00	60g VOC (ALE215)	S
			18112656	3CC2-V		1.50 - 1.50	60g VOC (ALE215)	S
			18112661	3CD2		1.00 - 1.00	60g VOC (ALE215)	S

18112710	3CF2-V		1.50 - 1.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x					x		
18112701	3CF2		1.00 - 1.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x	x			x		x							x			
18112697	3CF2		0.50 - 0.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x					x		
				1kg TUB	S	x	x			x		x							x			
18112693	3CE2-V		1.60 - 1.60	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x					x		
18112687	3CE2		1.00 - 1.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x	x			x		x							x			
18112683	3CE2		0.50 - 0.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x					x		
				1kg TUB	S	x	x			x		x							x			
18112676	3CD2-V		2.90 - 2.90	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x					x		
18112670	3CD2		2.00 - 2.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x	x			x		x							x			

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18112715			18112721			18112733		18112759			18112771		18112747			18112751		
Customer Sample Reference			3CG2			3CG2			3CG2-V		3CH6			3CH6-V		3CJ5			3CJ5		
AGS Reference																					
Depth (m)			0.50 - 0.50			0.90 - 0.90			1.10 - 1.10		0.50 - 0.50			0.80 - 0.80		0.50 - 0.50			1.20 - 1.20		
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 11					X					X					X				
Ammonium Low	All	NDPs: 0 Tests: 21	X			X					X					X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 30		X			X		X			X		X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 11					X					X					X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 11				X					X					X					
Calorific Value (S)*	All	NDPs: 0 Tests: 6					X														
CEN Readings	All	NDPs: 0 Tests: 21	X			X					X					X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 51	X	X		X	X		X		X	X		X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 21	X			X					X					X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 21	X			X					X					X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 30		X			X		X			X		X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 21	X			X					X					X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 30		X			X		X			X		X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 30			X			X		X			X		X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 21	X			X					X					X			X		

18112743	3CJ6-V		2.30 - 2.30	250g Amber Jar (ALE210)	S				x						x				x				x		
18112705	3CJ5-V		2.30 - 2.30	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S				x						x				x				x		
18112738	3CJ6		2.00 - 2.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S				x						x				x				x		
				1kg TUB	S			x						x	x		x	x			x				x
18112726	3CJ6		1.10 - 1.10	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S	x			x	x		x			x				x				x		
				1kg TUB	S			x				x		x	x		x	x			x				x
18112666	3CJ6		0.60 - 0.60	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S				x						x				x				x		
				1kg TUB	S			x						x	x		x	x			x				x
18112652	3CJ6		0.30 - 0.30	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S	x			x	x					x				x				x		
				1kg TUB	S			x				x		x	x		x	x			x				x
18112763	3CJ5		2.20 - 2.20	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S				x			x			x				x				x		
				1kg TUB	S			x						x	x		x	x			x				x
18112755	3CJ5		1.90 - 1.90	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S	x			x	x					x				x				x		
				1kg TUB	S			x				x		x	x		x	x			x				x

PRELIMINARY/INTERIM REPORT

SDG: 180814-70 **Client Reference:** **Report Number:** 469236
Location: Llanwern **Order Number:** LLA472 **Superseded Report:**

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																	
			18112715			18112721			18112733		18112759			18112771		18112747			18112751		
			Customer Sample Reference																	
			3CG2			3CG2			3CG2-V		3CH6			3CH6-V		3CJ5			3CJ5		
			AGS Reference																	
			Depth (m)																	
			0.50 - 0.50			0.90 - 0.90			1.10 - 1.10		0.50 - 0.50			0.80 - 0.80		0.50 - 0.50			1.20 - 1.20		
			Container																	
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type																	
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 21	X			X					X					X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 30		X			X		X			X		X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 30		X			X		X			X		X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 21	X			X					X					X			X		
pH	All	NDPs: 0 Tests: 30		X			X		X			X		X			X			X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 21	X			X					X					X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 30		X			X		X			X		X			X			X	
Sample description	All	NDPs: 0 Tests: 30		X			X		X			X		X			X			X	
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 8															X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 30		X			X		X			X		X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 11					X					X					X				
Total Sulphur	All	NDPs: 0 Tests: 11					X					X					X				
TPH CWG (W)	All	NDPs: 0 Tests: 21	X			X					X					X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 30		X			X		X			X		X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 30			X			X		X			X		X			X			X

| | | |

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)							18112743
Customer Sample Reference							3CJ6-V
AGS Reference							
Depth (m)							2.30 - 2.30
Container							60g VOC (ALE215)
Sample Type							S
GRO by GC-FID (S)	All	NDPs: 0 Tests: 30					X
VOC MS (S)	All	NDPs: 0 Tests: 30					X

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18112775	3CB2	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18112782	3CB2	2.20 - 2.20	Black	Loamy Sand	Stones	Crushed Brick
18112786	3CB2	2.80 - 2.80	Dark Brown	Loamy Sand	Stones	None
18112793	3CB2-V	3.00 - 3.00	Dark Brown	Sandy Silt Loam	None	Vegetation
18112799	3CC2	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18112656	3CC2-V	1.50 - 1.50	Dark Brown	Silt Loam	Vegetation	None
18112661	3CD2	1.00 - 1.00	Black	Silty Sand	Stones	Vegetation
18112670	3CD2	2.00 - 2.00	Black	Sandy Silt Loam	Stones	Vegetation
18112676	3CD2-V	2.90 - 2.90	Dark Brown	Silty Clay Loam	Stones	None
18112683	3CE2	0.50 - 0.50	Black	Sand	Stones	None
18112687	3CE2	1.00 - 1.00	Black	Sand	Stones	None
18112693	3CE2-V	1.60 - 1.60	Dark Brown	Clay Loam	None	None
18112697	3CF2	0.50 - 0.50	Black	Sand	Stones	Vegetation
18112701	3CF2	1.00 - 1.00	Black	Sand	Stones	None
18112710	3CF2-V	1.50 - 1.50	Dark Brown	Silt Loam	Vegetation	None
18112715	3CG2	0.50 - 0.50	Black	Sand	Stones	Vegetation
18112721	3CG2	0.90 - 0.90	Black	Loamy Sand	Stones	Vegetation
18112733	3CG2-V	1.10 - 1.10	Dark Brown	Clay Loam	None	None
18112759	3CH6	0.50 - 0.50	Dark Brown	Silt Loam	Stones	Vegetation
18112771	3CH6-V	0.80 - 0.80	Dark Brown	Silty Clay	None	None
18112747	3CJ5	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18112751	3CJ5	1.20 - 1.20	Dark Brown	Sandy Loam	Stones	None
18112755	3CJ5	1.90 - 1.90	Black	Loamy Sand	Stones	None
18112763	3CJ5	2.20 - 2.20	Black	Loamy Sand	Stones	None
18112652	3CJ6	0.30 - 0.30	Dark Brown	Sand	Stones	Stones
18112666	3CJ6	0.60 - 0.60	Black	Sand	Stones	None
18112726	3CJ6	1.10 - 1.10	Black	Loamy Sand	Stones	None
18112738	3CJ6	2.00 - 2.00	Black	Loamy Sand	Stones	None
18112705	3CJ5-V	2.30 - 2.30	Dark Brown	Silty Clay	None	None
18112743	3CJ6-V	2.30 - 2.30	Dark Brown	Clay Loam	Vegetation	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CB2	3CB2	3CB2	3CB2-V	3CC2	3CC2-V
			Depth (m)	1.00 - 1.00	2.20 - 2.20	2.80 - 2.80	3.00 - 3.00	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112775	18112782	18112786	18112793	18112799	18112656
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5.6	11	9.4	20	13	25
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB				incomplete			
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB				incomplete			
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB				incomplete			
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB				incomplete			
Water Analytical M (ad)	<0.5 %	SUB				incomplete			
Water Gross M(ex)	<0.5 %	SUB				incomplete			
Water Total M(ar)	<0.5 %	SUB				incomplete			
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0112 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0224 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0448 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.0784 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.405			0.24	
Sulphate, Total potential	<0.06 %	TM132			1.22			0.72	
Soil Organic Matter (SOM)	<0.35 %	TM132		5.59 #	74 #	30 #	0.893 #	46.7 #	1.32 #
pH	1 pH Units	TM133		10.6 M	8.38 M	8.76 M	8.4 M	8.45 M	8.18 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	3.44 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		16.2 M	3.14 M	3.16 M	8.73 M	12.5 M	8.07 M
Cadmium	<0.02 mg/kg	TM181		0.887 M	0.122 M	0.154 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		127 M	12.2 M	15 M	25.2 M	23.4 M	40.2 M
Copper	<1.4 mg/kg	TM181		18.6 M	16.5 M	10.5 M	8.86 M	42.8 M	24.4 M
Iron	<1000 mg/kg	TM181		94800 #	12100 #	23000 #	32100 #	46700 #	32600 #
Lead	<0.7 mg/kg	TM181		84.4 M	30.1 M	23 M	14 M	73 M	17.8 M
Manganese	<0.13 mg/kg	TM181		12100 M	735 M	1910 M	1030 M	2250 M	577 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		19 M	7.25 M	8.2 M	27.6 M	35.3 M	35.2 M
Selenium	<1 mg/kg	TM181		<10 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		469 #	15.7 #	28.8 #	40.2 #	47.9 #	51.2 #
Zinc	<1.9 mg/kg	TM181		292 M	105 M	92.5 M	80.7 M	264 M	111 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.104			0.153	
Calcium	<21 mg/kg	TM224			76100			38900	

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			3CB2	1.00 - 1.00	Soil/Solid (S)	13/08/2018	00:00	14/08/2018	180814-70	18112775	
Magnesium	<8 mg/kg	TM224		35500							
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.051 M							
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		0.0032 #							
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #							
Additional Asbestos Components (Using TM048)		TM304		None #							
Analysts Comments		TM304		N/A							
Asbestos Quantification - Total - %	<0.001 %	TM304		0.0032 #							

Component	LOD/Units	Method	3CB2	3CB2	3CB2	3CB2-V	3CC2	3CC2-V
			2.20 - 2.20	2.80 - 2.80	3.00 - 3.00	1.00 - 1.00	1.50 - 1.50	
			Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
			13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	
			00:00	00:00	00:00	00:00	00:00	
			14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	
			180814-70	180814-70	180814-70	180814-70	180814-70	
			18112782	18112786	18112793	18112799	18112656	
Magnesium	<8 mg/kg	TM224	35500			6090		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243	0.051 M			0.0441 M		
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304	0.0032 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304	<0.001 #					
Additional Asbestos Components (Using TM048)		TM304	None #					
Analysts Comments		TM304	N/A					
Asbestos Quantification - Total - %	<0.001 %	TM304	0.0032 #					

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CD2	3CD2	3CD2-V	3CE2	3CE2	3CE2-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112661	18112670	18112676	18112683	18112687	18112693
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		22	21	27	10	15	23
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB			incomplete			incomplete	
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB			incomplete			incomplete	
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB			incomplete			incomplete	
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB			incomplete			incomplete	
Water Analytical M (ad)	<0.5 %	SUB			incomplete			incomplete	
Water Gross M(ex)	<0.5 %	SUB			incomplete			incomplete	
Water Total M(ar)	<0.5 %	SUB			incomplete			incomplete	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	103 M	<12 M	96.8 M	179 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0118 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.676			0.477	
Sulphate, Total potential	<0.06 %	TM132			2.03			1.43	
Soil Organic Matter (SOM)	<0.35 %	TM132		>100 #	>100 #	1.88 #	98.8 #	>100 #	2.21 #
pH	1 pH Units	TM133		8.27 M	8.44 M	6.68 M	8.41 M	8.43 M	7.07 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	31.7 M	4.32 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.61 M	2.38 M	8.6 M	9.67 M	11 M	8.58 M
Cadmium	<0.02 mg/kg	TM181		0.063 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		5.58 M	9.08 M	37.6 M	<0.9 M	9.65 M	43.4 M
Copper	<1.4 mg/kg	TM181		23.6 M	14.6 M	23.9 M	28.2 M	42.5 M	20.9 M
Iron	<1000 mg/kg	TM181		14900 #	4370 #	33800 #	129000 #	41400 #	36700 #
Lead	<0.7 mg/kg	TM181		10.2 M	6.14 M	19.1 M	208 M	73.8 M	23.2 M
Manganese	<0.13 mg/kg	TM181		885 M	237 M	328 M	1720 M	906 M	677 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		14.9 M	7.1 M	34.2 M	23.9 M	61.2 M	35.1 M
Selenium	<1 mg/kg	TM181		1.23 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		14.5 #	7.28 #	52.3 #	40.2 #	69.3 #	53.9 #
Zinc	<1.9 mg/kg	TM181		50.7 M	30.4 M	133 M	311 M	320 M	128 M
Sulphate, acid soluble (total)	<0.02 %	TM221			<0.02			0.0221	
Calcium	<21 mg/kg	TM224			6080			8780	

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			3CD2	1.00 - 1.00	Soil/Solid (S)	13/08/2018	00:00	14/08/2018	180814-70	18112661	
			3CD2	2.00 - 2.00	Soil/Solid (S)	13/08/2018	00:00	14/08/2018	180814-70	18112670	
			3CD2-V	2.90 - 2.90	Soil/Solid (S)	13/08/2018	00:00	14/08/2018	180814-70	18112676	
			3CE2	0.50 - 0.50	Soil/Solid (S)	13/08/2018	00:00	14/08/2018	180814-70	18112683	
			3CE2	1.00 - 1.00	Soil/Solid (S)	13/08/2018	00:00	14/08/2018	180814-70	18112687	
			3CE2-V	1.60 - 1.60	Soil/Solid (S)	13/08/2018	00:00	14/08/2018	180814-70	18112693	
Magnesium	<8 mg/kg	TM224		796				1700			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0278 M				0.0138 M			

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CF2	3CF2	3CF2-V	3CG2	3CG2	3CG2-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	0.90 - 0.90	1.10 - 1.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112697	18112701	18112710	18112715	18112721	18112733
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.9	12	23	7.6	11	32
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB						incomplete	
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB						incomplete	
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB						incomplete	
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB						incomplete	
Water Analytical M (ad)	<0.5 %	SUB						incomplete	
Water Gross M(ex)	<0.5 %	SUB						incomplete	
Water Total M(ar)	<0.5 %	SUB						incomplete	
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	196 M	<12 M	<12 M	109 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0147 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.574			0.512	
Sulphate, Total potential	<0.06 %	TM132			1.72			1.54	
Soil Organic Matter (SOM)	<0.35 %	TM132		74.6 #	>100 #	2.97 #	69.5 #	70.7 #	6.4 #
pH	1 pH Units	TM133		8.34 M	8.36 M	7.43 M	8.46 M	8.62 M	7.39 M
Cyanide, Total	<1 mg/kg	TM153		1.79 M	<1 M	<1 M	3.86 M	3.8 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.55 M	5 M	11.4 M	7.65 M	6.53 M	13 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	0.0331 M	<0.2 M	0.242 M
Chromium	<0.9 mg/kg	TM181		48.7 M	7.82 M	34.2 M	8.06 M	31.3 M	39.4 M
Copper	<1.4 mg/kg	TM181		27.4 M	20 M	20.9 M	25.5 M	26.9 M	32.3 M
Iron	<1000 mg/kg	TM181		102000 #	15600 #	35500 #	49500 #	138000 #	33700 #
Lead	<0.7 mg/kg	TM181		40.8 M	14.5 M	23.4 M	33.1 M	34.8 M	49 M
Manganese	<0.13 mg/kg	TM181		3950 M	682 M	476 M	1190 M	3940 M	321 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		20.3 M	9.53 M	32.8 M	15.2 M	24.5 M	33.9 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		77.1 #	21.5 #	48.2 #	29.1 #	84.7 #	55.5 #
Zinc	<1.9 mg/kg	TM181		185 M	93.9 M	116 M	118 M	131 M	167 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.0649			0.0459	
Calcium	<21 mg/kg	TM224			24900			38700	

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CF2	3CF2	3CF2-V	3CG2	3CG2	3CG2-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	0.90 - 0.90	1.10 - 1.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112697	18112701	18112710	18112715	18112721	18112733
			AGS Reference						
Magnesium	<8 mg/kg	TM224			7760			6400	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0163 M			0.0289 M	

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CH6	3CH6-V	3CJ5	3CJ5	3CJ5	3CJ5
			Depth (m)	0.50 - 0.50	0.80 - 0.80	0.50 - 0.50	1.20 - 1.20	1.90 - 1.90	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112759	18112771	18112747	18112751	18112755	18112763
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	34	15	8.6	15	14
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB							incomplete
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB							incomplete
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB							incomplete
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB							incomplete
Water Analytical M (ad)	<0.5 %	SUB							incomplete
Water Gross M(ex)	<0.5 %	SUB							incomplete
Water Total M(ar)	<0.5 %	SUB							incomplete
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	162 M	67.1 M	<12 M	21.7 M	44.7 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.791 M	0.0875 M	0.13 M	0.0696 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.484 M	0.0219 M	0.59 M	0.209 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	0.0354 M	<0.015 M	1.16 M	0.441 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	1.31 M	0.109 M	1.88 M	0.719 M
Sulphur, Total	<0.02 %	TM132		0.171		0.104		0.47	
Sulphate, Total potential	<0.06 %	TM132		0.513		0.312		1.41	
Soil Organic Matter (SOM)	<0.35 %	TM132		8.5 #	5.4 #	6.5 #	1.74 #	79 #	53.1 #
pH	1 pH Units	TM133		8.48 M	7.92 M	9.03 M	12.6 M	10.2 M	8.09 M
Cyanide, Total	<1 mg/kg	TM153		1.4 M	<1 M	4.35 M	<1 M	7.13 M	1.82 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.3 M	11.5 M	19.5 M	<6 M	7.18 M	10.4 M
Cadmium	<0.02 mg/kg	TM181		0.435 M	0.109 M	9.59 M	0.596 M	3.09 M	0.564 M
Chromium	<0.9 mg/kg	TM181		232 M	44.6 M	185 M	471 M	32 M	22.2 M
Copper	<1.4 mg/kg	TM181		45.2 M	21.5 M	91.3 M	20.3 M	43 M	41.5 M
Iron	<1000 mg/kg	TM181		84800 #	32900 #	225000 #	153000 #	87900 #	47100 #
Lead	<0.7 mg/kg	TM181		146 M	30.2 M	1330 M	175 M	385 M	105 M
Manganese	<0.13 mg/kg	TM181		15000 M	377 M	8030 M	27400 M	1900 M	1790 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		21.4 M	29.9 M	62.1 M	15.2 M	30.5 M	20.7 M
Selenium	<1 mg/kg	TM181		6.44 #	<1 #	<10 #	11.1 #	<10 #	3.14 #
Vanadium	<0.2 mg/kg	TM181		274 #	63.5 #	147 #	375 #	67.5 #	48.4 #
Zinc	<1.9 mg/kg	TM181		670 M	141 M	7680 M	1140 M	2140 M	479 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.167		0.0594		0.11	
Calcium	<21 mg/kg	TM224		98300		56300		23400	

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CH6	3CH6-V	3CJ5	3CJ5	3CJ5	3CJ5
			Depth (m)	0.50 - 0.50	0.80 - 0.80	0.50 - 0.50	1.20 - 1.20	1.90 - 1.90	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112759	18112771	18112747	18112751	18112755	18112763
			AGS Reference						
Magnesium	<8 mg/kg	TM224		11500		8790		3870	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.213 M		0.0363 M		0.203 M	

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CJ6	3CJ6	3CJ6	3CJ6	3CJ5-V	3CJ6-V
			Depth (m)	0.30 - 0.30	0.60 - 0.60	1.10 - 1.10	2.00 - 2.00	2.30 - 2.30	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112652	18112666	18112726	18112738	18112705	18112743
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		2.8	11	11	14	21	30
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB				incomplete			
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB				incomplete			
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB				incomplete			
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB				incomplete			
Water Analytical M (ad)	<0.5 %	SUB				incomplete			
Water Gross M(ex)	<0.5 %	SUB				incomplete			
Water Total M(ar)	<0.5 %	SUB				incomplete			
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	71.2 M	28.8 M	219 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0103 M	0.0113 M	0.0113 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0113 M	0.0226 M	0.0116 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	0.0678 M	0.0348 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	0.102 M	0.0464 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.178		0.518			
Sulphate, Total potential	<0.06 %	TM132		0.534		1.55			
Soil Organic Matter (SOM)	<0.35 %	TM132		3 #	>100 #	76.9 #	52.6 #	3.83 #	3.53 #
pH	1 pH Units	TM133		12.5 M	11.2 M	11.5 M	8.16 M	7.69 M	7.32 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	5.35 M	4.29 M	8.83 M	7.64 M	11.8 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	<0.02 M	0.0858 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		842 M	212 M	148 M	54.7 M	37.6 M	36.8 M
Copper	<1.4 mg/kg	TM181		22.3 M	21.7 M	35.9 M	34.7 M	12.9 M	11.3 M
Iron	<1000 mg/kg	TM181		155000 #	80500 #	41900 #	25100 #	25200 #	37300 #
Lead	<0.7 mg/kg	TM181		10.3 M	31.3 M	24.7 M	56.1 M	28.3 M	25.5 M
Manganese	<0.13 mg/kg	TM181		29500 M	10900 M	9530 M	2460 M	340 M	234 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		7.82 M	10.2 M	10.1 M	16.8 M	36.8 M	27.2 M
Selenium	<1 mg/kg	TM181		13.8 #	4.38 #	4.32 #	2.41 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		614 #	195 #	168 #	53 #	53.4 #	56.6 #
Zinc	<1.9 mg/kg	TM181		69.8 M	159 M	86.7 M	161 M	118 M	99.7 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.18		0.463			
Calcium	<21 mg/kg	TM224		230000		81100			

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CJ6	3CJ6	3CJ6	3CJ6	3CJ5-V	3CJ6-V
			Depth (m)	0.30 - 0.30	0.60 - 0.60	1.10 - 1.10	2.00 - 2.00	2.30 - 2.30	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112652	18112666	18112726	18112738	18112705	18112743
			AGS Reference						
Magnesium	<8 mg/kg	TM224		13500		10100			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0142 M		0.0595 M			

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CB2	3CB2	3CB2	3CB2-V	3CC2	3CC2-V
			Depth (m)	1.00 - 1.00	2.20 - 2.20	2.80 - 2.80	3.00 - 3.00	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112775	18112782	18112786	18112793	18112799	18112656
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		111	109	92.1	97.7	84.5	78.1
Acenaphthene-d10 % recovery**	%	TM218		116	116	96.4	94.7	88.7	76
Phenanthrene-d10 % recovery**	%	TM218		114	117	98.3	94	83	74.8
Chrysene-d12 % recovery**	%	TM218		100	111	102	85.5	92.4	81.4
Perylene-d12 % recovery**	%	TM218		100	105	94.4	85.7	82.2	80.9
Naphthalene	<0.009 mg/kg	TM218		0.719 M	13.3 M	0.735 M	<0.009 M	0.576 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.855 M	61.5 M	1.86 M	<0.012 M	1.22 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0718 M	2.72 M	0.0614 M	<0.008 M	0.15 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.609 M	76.8 M	0.787 M	<0.01 M	0.807 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		5.29 M	831 M	8.42 M	<0.015 M	8.98 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		1.55 M	204 M	4.86 M	<0.016 M	3.2 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		9.73 M	1260 M	33.8 M	0.0569 M	28.1 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		6.83 M	953 M	25.1 M	0.0404 M	19.9 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		4.11 M	358 M	14.9 M	0.021 M	14.2 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		3.45 M	308 M	14.5 M	0.0251 M	12.3 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		4.98 M	378 M	21.9 M	0.0262 M	18.5 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.04 M	159 M	6.81 M	<0.014 M	6.82 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		3.67 M	303 M	13.5 M	0.0209 M	11.9 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		3.21 M	194 M	9.14 M	<0.018 M	7.72 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.675 M	46.1 M	2.34 M	<0.023 M	2.62 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.6 M	223 M	9.86 M	<0.024 M	7.28 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		50.4	5370	169	0.191	144	<0.118

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CD2	3CD2	3CD2-V	3CE2	3CE2	3CE2-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112661	18112670	18112676	18112683	18112687	18112693
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		incomplete	incomplete	81.6	86.7	86.5	91.7
Acenaphthene-d10 % recovery**	%	TM218		incomplete	incomplete	71.9	90.8	86	80.7
Phenanthrene-d10 % recovery**	%	TM218		incomplete	incomplete	81.4	91.6	78.3	79.4
Chrysene-d12 % recovery**	%	TM218		incomplete	incomplete	82.8	77.4	48.4	75.5
Perylene-d12 % recovery**	%	TM218		incomplete	incomplete	83.5	71.1	38.1	75.4
Naphthalene	<0.009 mg/kg	TM218		0.343 M	0.175 M	0.0202 M	0.986 M	0.423 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0416 M	0.0693 M	<0.012 M	0.171 M	0.0411 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0394 M	0.0707 M	<0.008 M	0.0137 M	0.0157 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0956 M	0.197 M	<0.01 M	0.0496 M	0.0438 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.72 M	1.42 M	<0.015 M	0.647 M	0.694 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.181 M	0.432 M	<0.016 M	0.23 M	0.104 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.473 M	1.76 M	<0.017 M	1.35 M	0.892 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.374 M	1.36 M	<0.015 M	1.2 M	0.701 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.367 M	1.61 M	<0.014 M	0.942 M	0.42 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.314 M	1.3 M	<0.01 M	0.871 M	0.386 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.64 M	2.65 M	<0.015 M	1.74 M	0.689 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.198 M	0.709 M	<0.014 M	0.562 M	0.239 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.347 M	1.52 M	<0.015 M	1.04 M	0.398 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.22 M	0.893 M	<0.018 M	0.764 M	0.285 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0908 M	0.314 M	<0.023 M	0.252 M	0.0909 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.285 M	1.06 M	<0.024 M	0.917 M	0.338 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		incomplete	incomplete	<0.118	11.7	5.76	<0.118

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CF2	3CF2	3CF2-V	3CG2	3CG2	3CG2-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	0.90 - 0.90	1.10 - 1.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112697	18112701	18112710	18112715	18112721	18112733
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.1	incomplete	105	92.8	94.9	96.8
Acenaphthene-d10 % recovery**	%	TM218		83	incomplete	108	95.8	96.4	97.1
Phenanthrene-d10 % recovery**	%	TM218		90.7	incomplete	106	90.9	95.2	93.8
Chrysene-d12 % recovery**	%	TM218		85.4	incomplete	94.7	75.3	78.1	83.9
Perylene-d12 % recovery**	%	TM218		73.1	incomplete	96.5	75.9	82.2	84.4
Naphthalene	<0.009 mg/kg	TM218		0.725 M	0.377 M	<0.009 M	1.84 M	1.28 M	0.0164 M
Acenaphthylene	<0.012 mg/kg	TM218		0.196 M	0.081 M	<0.012 M	3.52 M	0.866 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0359 M	0.0364 M	<0.008 M	0.177 M	0.16 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.136 M	0.0681 M	<0.01 M	2.65 M	0.39 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		2.19 M	1.06 M	0.0493 M	25.2 M	16.8 M	0.0807 M
Anthracene	<0.016 mg/kg	TM218		0.475 M	0.222 M	<0.016 M	7.58 M	3.2 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		4.65 M	0.9 M	0.0859 M	39 M	28 M	0.138 M
Pyrene	<0.015 mg/kg	TM218		3.47 M	0.73 M	0.0668 M	25.1 M	16.3 M	0.113 M
Benz(a)anthracene	<0.014 mg/kg	TM218		2.56 M	0.654 M	0.0377 M	16.1 M	7 M	0.0459 M
Chrysene	<0.01 mg/kg	TM218		2.46 M	0.606 M	0.0403 M	13.3 M	6.9 M	0.0601 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		3.97 M	1.44 M	0.0598 M	16.9 M	9.63 M	0.072 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.41 M	0.417 M	0.0218 M	5.56 M	3.85 M	0.0276 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		2.33 M	0.673 M	0.0407 M	12.4 M	5.97 M	0.0476 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.77 M	0.562 M	0.0409 M	9.63 M	7.51 M	0.0465 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.582 M	0.179 M	<0.023 M	2.46 M	1.74 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.77 M	0.697 M	0.0383 M	7.7 M	6.92 M	0.0429 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		28.7	incomplete	0.482	189	117	0.691

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CH6	3CH6-V	3CJ5	3CJ5	3CJ5	3CJ5
			Depth (m)	0.50 - 0.50	0.80 - 0.80	0.50 - 0.50	1.20 - 1.20	1.90 - 1.90	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112759	18112771	18112747	18112751	18112755	18112763
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		103	95.5	91.1	95	87.5	104
Acenaphthene-d10 % recovery**	%	TM218		102	98.4	90.9	90.8	135	113
Phenanthrene-d10 % recovery**	%	TM218		102	94.1	99.8	89	127	100
Chrysene-d12 % recovery**	%	TM218		91.9	83.8	83.4	80.7	100	78.8
Perylene-d12 % recovery**	%	TM218		93.6	86.2	73.8	75.6	88.5	66.6
Naphthalene	<0.009 mg/kg	TM218		0.253 M	0.0143 M	1.18 M	0.166 M	2480 M	588 M
Acenaphthylene	<0.012 mg/kg	TM218		0.268 M	<0.012 M	0.0242 M	<0.012 M	99 M	13.9 M
Acenaphthene	<0.008 mg/kg	TM218		0.0317 M	<0.008 M	<0.008 M	<0.008 M	5.55 M	0.849 M
Fluorene	<0.01 mg/kg	TM218		0.18 M	<0.01 M	<0.01 M	0.0191 M	90.6 M	12.3 M
Phenanthrene	<0.015 mg/kg	TM218		1.31 M	0.0572 M	0.234 M	0.208 M	307 M	39.7 M
Anthracene	<0.016 mg/kg	TM218		0.464 M	<0.016 M	0.0523 M	0.0314 M	81.1 M	11.6 M
Fluoranthene	<0.017 mg/kg	TM218		2.71 M	0.101 M	0.311 M	0.163 M	208 M	29 M
Pyrene	<0.015 mg/kg	TM218		1.9 M	0.0728 M	0.263 M	0.135 M	129 M	18.7 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.25 M	0.039 M	0.133 M	0.0626 M	59.6 M	8.66 M
Chrysene	<0.01 mg/kg	TM218		1.14 M	0.0474 M	0.132 M	0.0875 M	44.6 M	8.47 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.75 M	0.0649 M	0.224 M	0.0975 M	57.1 M	9.5 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.615 M	0.0244 M	0.0679 M	0.0299 M	20 M	3.57 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.17 M	0.0386 M	0.116 M	0.0517 M	39.3 M	6.11 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.09 M	0.043 M	0.0835 M	0.0501 M	18.4 M	3.18 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.239 M	<0.023 M	0.0314 M	<0.023 M	5.99 M	<1.15 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.885 M	<0.024 M	0.107 M	0.0523 M	19.3 M	3.46 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		15.2	0.502	2.96	1.15	3660	757

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CJ6	3CJ6	3CJ6	3CJ6	3CJ5-V	3CJ6-V
			Depth (m)	0.30 - 0.30	0.60 - 0.60	1.10 - 1.10	2.00 - 2.00	2.30 - 2.30	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112652	18112666	18112726	18112738	18112705	18112743
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		96.1	93.9	88.2	83.3	96.2	91.7
Acenaphthene-d10 % recovery**	%	TM218		90	92.6	96.9	76.7	88.6	88.6
Phenanthrene-d10 % recovery**	%	TM218		98.8	92.6	98.4	96.6	86.1	89.3
Chrysene-d12 % recovery**	%	TM218		110	75.6	96	93.1	81.3	96.8
Perylene-d12 % recovery**	%	TM218		109	108	89.7	80.6	78.1	98.7
Naphthalene	<0.009 mg/kg	TM218		0.381 M	11.4 M	1.55 M	1.07 M	0.05 M	0.221 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0919 M	25.4 M	1.86 M	0.952 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0117 M	0.768 M	0.101 M	0.126 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.041 M	13.2 M	1.21 M	0.831 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.534 M	84.9 M	7.14 M	5.48 M	<0.015 M	0.0353 M
Anthracene	<0.016 mg/kg	TM218		0.153 M	42.6 M	3.55 M	1.89 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.882 M	232 M	23.4 M	11.9 M	<0.017 M	0.0596 M
Pyrene	<0.015 mg/kg	TM218		0.635 M	162 M	18 M	8.18 M	<0.015 M	0.0442 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.415 M	137 M	12.6 M	4.65 M	<0.014 M	0.0319 M
Chrysene	<0.01 mg/kg	TM218		0.428 M	110 M	12.4 M	4.39 M	<0.01 M	0.0289 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.578 M	63.4 M	17.5 M	6.06 M	<0.015 M	0.0437 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.201 M	70.5 M	4.75 M	1.93 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.362 M	108 M	9.4 M	3.49 M	<0.015 M	0.0287 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.244 M	74.8 M	5.55 M	1.65 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0698 M	22.1 M	1.91 M	0.634 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.244 M	62.4 M	5 M	1.83 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		5.27	1220	126	55	<0.118	0.493

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Semi Volatile Organic Compounds

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CJ5	3CJ5	3CJ5	3CJ5	3CJ6	3CJ6
			Depth (m)	0.50 - 0.50	1.20 - 1.20	1.90 - 1.90	2.20 - 2.20	0.30 - 0.30	0.60 - 0.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112747	18112751	18112755	18112763	18112652	18112666
			AGS Reference						
Phenol	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
Pentachlorophenol	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
n-Nitroso-n-dipropylamine	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
Nitrobenzene	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
Isophorone	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
Hexachloroethane	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
Hexachlorocyclopentadiene	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
Hexachlorobutadiene	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
Hexachlorobenzene	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
n-Dioctyl phthalate	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
Dimethyl phthalate	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
Diethyl phthalate	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
n-Dibutyl phthalate	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
Dibenzofuran	<0.1 mg/kg	TM157		9.24	<0.1	66.7	<0.1	0.412	7.21
Carbazole	<0.1 mg/kg	TM157		7.34	<0.1	55.8	<0.1	0.113	9.54
Butylbenzyl phthalate	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
bis(2-Ethylhexyl) phthalate	<0.1 mg/kg	TM157		30.8	<0.1	<2	<0.1	<0.1	<2
bis(2-Chloroethoxy)methane	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
bis(2-Chloroethyl)ether	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
Azobenzene	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
4-Nitrophenol	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
4-Nitroaniline	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
4-Methylphenol	<0.1 mg/kg	TM157		<1	<0.1	<2	0.951	<0.1	<2
4-Chlorophenylphenylether	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
4-Chloroaniline	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
4-Chloro-3-methylphenol	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
4-Bromophenylphenylether	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
3-Nitroaniline	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
2-Nitrophenol	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
2-Nitroaniline	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
2-Methylphenol	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
1,2,4-Trichlorobenzene	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
2-Chlorophenol	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Semi Volatile Organic Compounds

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CJ5	3CJ5	3CJ5	3CJ5	3CJ6	3CJ6
			Depth (m)	0.50 - 0.50	1.20 - 1.20	1.90 - 1.90	2.20 - 2.20	0.30 - 0.30	0.60 - 0.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112747	18112751	18112755	18112763	18112652	18112666
			AGS Reference						
2,6-Dinitrotoluene	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
2,4-Dinitrotoluene	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
2,4-Dimethylphenol	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
2,4-Dichlorophenol	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
2,4,6-Trichlorophenol	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
2,4,5-Trichlorophenol	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
1,4-Dichlorobenzene	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
1,3-Dichlorobenzene	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
1,2-Dichlorobenzene	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
2-Chloronaphthalene	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2
2-Methylnaphthalene	<0.1 mg/kg	TM157		12.2	0.208	73.4	<0.1	0.257	4.94
Acenaphthylene	<0.1 mg/kg	TM157		16.4	<0.1	116	<0.1	0.36	33.3
Acenaphthene	<0.1 mg/kg	TM157		<1	<0.1	6.97	<0.1	<0.1	<2
Anthracene	<0.1 mg/kg	TM157		12	<0.1	91.8	<0.1	0.535	48.3
Benzo(a)anthracene	<0.1 mg/kg	TM157		10.8	<0.1	78.1	0.116	1.39	179
Benzo(b)fluoranthene	<0.1 mg/kg	TM157		7.82	<0.1	56.4	<0.1	1.1	174
Benzo(k)fluoranthene	<0.1 mg/kg	TM157		5.76	<0.1	45.8	<0.1	0.792	139
Benzo(a)pyrene	<0.1 mg/kg	TM157		7.71	<0.1	56.3	<0.1	1.03	148
Benzo(g,h,i)perylene	<0.1 mg/kg	TM157		4.47	<0.1	30.3	<0.1	0.689	96.3
Chrysene	<0.1 mg/kg	TM157		12.9	0.131	80.5	0.174	1.73	178
Fluoranthene	<0.1 mg/kg	TM157		32.1	0.131	238	0.151	3.07	333
Fluorene	<0.1 mg/kg	TM157		15.3	<0.1	112	<0.1	0.175	12.3
Indeno(1,2,3-cd)pyrene	<0.1 mg/kg	TM157		4.01	<0.1	29.1	<0.1	0.607	105
Phenanthrene	<0.1 mg/kg	TM157		44.5	0.284	327	0.139	2.11	99.8
Pyrene	<0.1 mg/kg	TM157		23.4	0.131	160	0.162	2.36	250
Naphthalene	<0.1 mg/kg	TM157		670	0.263	4700	0.742	2.04	19.5
Dibenzo(a,h)anthracene	<0.1 mg/kg	TM157		<1	<0.1	5	<0.1	0.134	23.3
Bis(2-chloroisopropyl) ether	<0.1 mg/kg	TM157		<1	<0.1	<2	<0.1	<0.1	<2

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Semi Volatile Organic Compounds

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CJ6	3CJ6				
			Depth (m)	1.10 - 1.10	2.00 - 2.00				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	13/08/2018	13/08/2018				
			Sample Time	00:00	00:00				
			Date Received	14/08/2018	14/08/2018				
			SDG Ref	180814-70	180814-70				
			Lab Sample No.(s)	18112726	18112738				
			AGS Reference						
Phenol	<0.1 mg/kg	TM157		<1	<1				
Pentachlorophenol	<0.1 mg/kg	TM157		<1	<1				
n-Nitroso-n-dipropylamine	<0.1 mg/kg	TM157		<1	<1				
Nitrobenzene	<0.1 mg/kg	TM157		<1	<1				
Isophorone	<0.1 mg/kg	TM157		<1	<1				
Hexachloroethane	<0.1 mg/kg	TM157		<1	<1				
Hexachlorocyclopentadiene	<0.1 mg/kg	TM157		<1	<1				
Hexachlorobutadiene	<0.1 mg/kg	TM157		<1	<1				
Hexachlorobenzene	<0.1 mg/kg	TM157		<1	<1				
n-Dioctyl phthalate	<0.1 mg/kg	TM157		<1	<1				
Dimethyl phthalate	<0.1 mg/kg	TM157		<1	<1				
Diethyl phthalate	<0.1 mg/kg	TM157		<1	<1				
n-Dibutyl phthalate	<0.1 mg/kg	TM157		<1	<1				
Dibenzofuran	<0.1 mg/kg	TM157		<1	<1				
Carbazole	<0.1 mg/kg	TM157		3.15	<1				
Butylbenzyl phthalate	<0.1 mg/kg	TM157		<1	<1				
bis(2-Ethylhexyl) phthalate	<0.1 mg/kg	TM157		<1	<1				
bis(2-Chloroethoxy)methane	<0.1 mg/kg	TM157		<1	<1				
bis(2-Chloroethyl)ether	<0.1 mg/kg	TM157		<1	<1				
Azobenzene	<0.1 mg/kg	TM157		<1	<1				
4-Nitrophenol	<0.1 mg/kg	TM157		<1	<1				
4-Nitroaniline	<0.1 mg/kg	TM157		<1	<1				
4-Methylphenol	<0.1 mg/kg	TM157		<1	<1				
4-Chlorophenylphenylether	<0.1 mg/kg	TM157		<1	<1				
4-Chloroaniline	<0.1 mg/kg	TM157		<1	<1				
4-Chloro-3-methylphenol	<0.1 mg/kg	TM157		<1	<1				
4-Bromophenylphenylether	<0.1 mg/kg	TM157		<1	<1				
3-Nitroaniline	<0.1 mg/kg	TM157		<1	<1				
2-Nitrophenol	<0.1 mg/kg	TM157		<1	<1				
2-Nitroaniline	<0.1 mg/kg	TM157		<1	<1				
2-Methylphenol	<0.1 mg/kg	TM157		<1	<1				
1,2,4-Trichlorobenzene	<0.1 mg/kg	TM157		<1	<1				
2-Chlorophenol	<0.1 mg/kg	TM157		<1	<1				

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Semi Volatile Organic Compounds

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CJ6	3CJ6				
			Depth (m)	1.10 - 1.10	2.00 - 2.00				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	13/08/2018	13/08/2018				
			Sample Time	00:00	00:00				
			Date Received	14/08/2018	14/08/2018				
			SDG Ref	180814-70	180814-70				
			Lab Sample No.(s)	18112726	18112738				
			AGS Reference						
2,6-Dinitrotoluene	<0.1 mg/kg	TM157		<1	<1				
2,4-Dinitrotoluene	<0.1 mg/kg	TM157		<1	<1				
2,4-Dimethylphenol	<0.1 mg/kg	TM157		<1	<1				
2,4-Dichlorophenol	<0.1 mg/kg	TM157		<1	<1				
2,4,6-Trichlorophenol	<0.1 mg/kg	TM157		<1	<1				
2,4,5-Trichlorophenol	<0.1 mg/kg	TM157		<1	<1				
1,4-Dichlorobenzene	<0.1 mg/kg	TM157		<1	<1				
1,3-Dichlorobenzene	<0.1 mg/kg	TM157		<1	<1				
1,2-Dichlorobenzene	<0.1 mg/kg	TM157		<1	<1				
2-Chloronaphthalene	<0.1 mg/kg	TM157		<1	<1				
2-Methylnaphthalene	<0.1 mg/kg	TM157		<1	<1				
Acenaphthylene	<0.1 mg/kg	TM157		4.87	1.37				
Acenaphthene	<0.1 mg/kg	TM157		<1	<1				
Anthracene	<0.1 mg/kg	TM157		16	2.46				
Benzo(a)anthracene	<0.1 mg/kg	TM157		36.8	6.53				
Benzo(b)fluoranthene	<0.1 mg/kg	TM157		30.6	4.85				
Benzo(k)fluoranthene	<0.1 mg/kg	TM157		20	4.49				
Benzo(a)pyrene	<0.1 mg/kg	TM157		26.9	4.84				
Benzo(g,h,i)perylene	<0.1 mg/kg	TM157		15.6	2.91				
Chrysene	<0.1 mg/kg	TM157		39.3	8.43				
Fluoranthene	<0.1 mg/kg	TM157		72.7	13.5				
Fluorene	<0.1 mg/kg	TM157		2.59	<1				
Indeno(1,2,3-cd)pyrene	<0.1 mg/kg	TM157		16	2.54				
Phenanthrene	<0.1 mg/kg	TM157		20.1	6.18				
Pyrene	<0.1 mg/kg	TM157		53.1	10.1				
Naphthalene	<0.1 mg/kg	TM157		3.9	1.91				
Dibenzo(a,h)anthracene	<0.1 mg/kg	TM157		3.54	<1				
Bis(2-chloroisopropyl) ether	<0.1 mg/kg	TM157		<1	<1				

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CB2	3CB2	3CB2	3CB2-V	3CC2	3CC2-V
			Depth (m)	1.00 - 1.00	2.20 - 2.20	2.80 - 2.80	3.00 - 3.00	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112775	18112782	18112786	18112793	18112799	18112656
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		40	46	66	126	47	125
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	<0.1 #	<0.1 #	<0.1 M	<0.1 #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	0.019	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	0.0123	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	0.0347	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.47	6.29	1.78	<0.1	2.13	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		27.6	62.8	17	<0.1	11.5	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		78.7	81.3	21.3	<0.1	28.7	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		39.6	19.5	1.99	<0.1	5.85	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		151	170	42	<0.1	48.1	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	0.0235	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		8.18	255	10.7	<0.1	15.4	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		43.6	4330	172	0.32	215	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		152	5480	440	2.18	676	1.55
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		159	826	97.6	2.64	166	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		76.7	215	30.2	1.88	48.6	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		362	10900	720	5.14	1070	1.55
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		514	11100	762	5.14	1120	1.55

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CD2	3CD2	3CD2-V	3CE2	3CE2	3CE2-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112661	18112670	18112676	18112683	18112687	18112693
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		73	63	70.5	49	73.8	127
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.1 M	<0.1 #	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	0.0151	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	0.0164	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.71	1.82	<0.1	8.76	3.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		87.4	39.8	<0.1	115	62.6	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		33.6	24.9	<0.1	92.7	68.8	0.547
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	15.5	14.5	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		125	66.6	<0.1	232	149	0.547
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	0.011	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		13.7	5.88	<0.1	8.43	3.8	0.401
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		65.5	37.2	<0.1	40.9	34.8	0.697
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		99.6	70.7	<0.1	137	75.4	3.52
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		13.5	13.9	<0.1	31.9	15.9	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.52	5.6	<0.1	10.1	4.66	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		192	128	<0.1	218	130	4.62
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		317	194	<0.1	450	279	5.17

PRELIMINARY/INTERIM REPORT

SDG: 180814-70 **Client Reference:** **Report Number:** 469236
Location: Llanwern **Order Number:** LLA472 **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CF2	3CF2	3CF2-V	3CG2	3CG2	3CG2-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	0.90 - 0.90	1.10 - 1.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112697	18112701	18112710	18112715	18112721	18112733
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		20	41	90.6	23.9	42.1	128
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	<0.1 #	<0.1 M	0.108 #	<0.1 #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.013	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.038	<0.01	<0.01	0.0573	0.0102	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0152	<0.01	<0.01	0.0162	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0109	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		7.77	2.32	<0.1	10.2	4.13	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		22.5	45.8	<0.1	18.3	83.3	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		38.6	44.2	3.17	39.9	76.6	1.85
Aliphatics >C35-C44	<0.1 mg/kg	TM173		5.95	11.7	<0.1	7.1	11.3	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		74.9	104	3.17	75.5	175	1.85
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0108	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		15.9	4.36	<0.1	20.3	6.86	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		41.8	29	<0.1	53.7	81.9	1.8
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		117	87.6	9.45	169	153	13.2
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		28.6	70.7	1.28	36.1	37.5	2.04
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		8.97	33	<0.1	10.3	10.6	0.298
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		203	192	10.7	279	280	17.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		278	296	13.9	355	455	18.9

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CH6	3CH6-V	3CJ5	3CJ5	3CJ5	3CJ5
			Depth (m)	0.50 - 0.50	0.80 - 0.80	0.50 - 0.50	1.20 - 1.20	1.90 - 1.90	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112759	18112771	18112747	18112751	18112755	18112763
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		50	80.8	84.4	52	61	21
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	<0.1 M	0.189 M	<0.1 #	276 #	44.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	0.0106	<0.01	0.112	0.0267
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0129	<0.01	0.0378	0.0142	0.424	0.126
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0164	<0.01	0.0448	0.0197	2.17	0.674
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	0.0389	0.0153	162	25.4
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	3.01	40.4	13.3
Aliphatics >C16-C21	<0.1 mg/kg	TM173		3.44	<0.1	8.92	8.4	176	58.9
Aliphatics >C21-C35	<0.1 mg/kg	TM173		15.7	3.79	45.9	63.8	80.9	39.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		4.27	<0.1	6.43	8.22	11.8	2.66
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		23.4	3.79	61.2	83.4	309	114
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.64	0.408
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.511	0.254
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0105	<0.01	0.0307	0.0131	1.45	0.449
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	0.026	0.0109	108	16.9
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.58	<0.1	0.337	2.75	344	120
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		7.89	<0.1	4.46	6.75	816	292
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		34.5	13.2	23.1	26.5	826	327
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		10	2.05	<0.1	7.97	129	49.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.2	0.407	<0.1	2.59	32.8	13.5
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		54	15.3	27.9	44	2120	788
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		77.5	19.1	89.3	128	2700	947

PRELIMINARY/INTERIM REPORT

SDG: 180814-70 **Client Reference:** **Report Number:** 469236
Location: Llanwern **Order Number:** LLA472 **Superseded Report:**

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CJ6	3CJ6	3CJ6	3CJ6	3CJ5-V	3CJ6-V
			Depth (m)	0.30 - 0.30	0.60 - 0.60	1.10 - 1.10	2.00 - 2.00	2.30 - 2.30	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112652	18112666	18112726	18112738	18112705	18112743
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		38	31	1	1	104	126
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.114 #	0.329 #	<0.1 #	<0.1 #	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	0.0147	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0196	0.0622	<0.01	<0.01	0.0191	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0185	0.0509	<0.01	<0.01	0.0203	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0309	0.052	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.88	20.4	5.6	3.7	0.495	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		5.7	176	29.9	14.7	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		28.4	154	53.2	38.5	0.889	1.66
Aliphatics >C35-C44	<0.1 mg/kg	TM173		4.82	34.4	11.5	6.88	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		41.8	384	100	63.8	1.38	1.66
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	0.0158	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	0.0316	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0123	0.0339	<0.01	<0.01	0.014	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0206	0.035	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.88	76.5	18.9	8.41	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		12.2	1060	182	43.7	0.343	0.851
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		32.6	3020	464	122	4.18	21.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		8.43	569	90.4	15.2	<0.1	2.76
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		2.76	151	23.9	4.54	<0.1	0.606
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		56.2	4720	754	189	4.53	25.3
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		98.1	5110	855	253	5.96	27

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CB2	3CB2	3CB2	3CB2-V	3CC2	3CC2-V
			Depth (m)	1.00 - 1.00	2.20 - 2.20	2.80 - 2.80	3.00 - 3.00	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112775	18112782	18112786	18112793	18112799	18112656
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	106	111	116	105	116
Toluene-d8**	%	TM116		95.3	93.3	99.4	98.4	97.3	97.6
4-Bromofluorobenzene**	%	TM116		83.5	75.7	92.4	97.7	84.9	99.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.84 M	0.149 M	<0.13 M	<0.13 M	0.34 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CD2	3CD2	3CD2-V	3CE2	3CE2	3CE2-V
			Depth (m)	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50	1.00 - 1.00	1.60 - 1.60
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112661	18112670	18112676	18112683	18112687	18112693
			AGS Reference						
Dibromofluoromethane**	%	TM116		113	109	158	108	106	108
Toluene-d8**	%	TM116		97	96.1	99.6	97.4	98	95.8
4-Bromofluorobenzene**	%	TM116		88.6	78.7	104	82.6	97.1	92.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	0.176 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	0.146 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CF2	3CF2	3CF2-V	3CG2	3CG2	3CG2-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	0.90 - 0.90	1.10 - 1.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112697	18112701	18112710	18112715	18112721	18112733
			AGS Reference						
Dibromofluoromethane**	%	TM116		102	102	111	97.3	107	116
Toluene-d8**	%	TM116		98	86.5	100	95.8	96.7	100
4-Bromofluorobenzene**	%	TM116		96.5	82.6	97	74.5	75.8	102
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<2 M	<0.1 M	<0.1 M	<0.2 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<1.8 M	<0.09 M	<0.09 M	<0.18 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<1.4 M	<0.07 M	<0.07 M	<0.14 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.8 M	<0.04 M	<0.04 M	<0.08 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<2 #	<0.1 #	<0.1 #	<0.2 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<2 M	<0.1 M	<0.1 M	<0.2 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<2.6 M	<0.13 M	<0.13 M	1.59 M	0.165 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<8	<0.4	<0.4	<0.8	<0.4	<0.4

PRELIMINARY/INTERIM REPORT

SDG: 180814-70 **Client Reference:** **Report Number:** 469236
Location: Llanwern **Order Number:** LLA472 **Superseded Report:**

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CH6	3CH6-V	3CJ5	3CJ5	3CJ5	3CJ5
			Depth (m)	0.50 - 0.50	0.80 - 0.80	0.50 - 0.50	1.20 - 1.20	1.90 - 1.90	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112759	18112771	18112747	18112751	18112755	18112763
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	130	101	98.4	73.7	84.5
Toluene-d8**	%	TM116		95.4	98.8	101	96.4	96.2	85.6
4-Bromofluorobenzene**	%	TM116		80.4	104	90.9	88.7	70.5	72.1
Dichlorodifluoromethane	<0.006 mg/kg	TM116				<0.06 M	<0.06 M	<0.06 M	<0.12 M
Chloromethane	<0.007 mg/kg	TM116				<0.07 #	<0.07 #	<0.07 #	<0.14 #
Vinyl Chloride	<0.006 mg/kg	TM116				<0.06 M	<0.06 M	<0.06 M	<0.12 M
Bromomethane	<0.01 mg/kg	TM116				<0.1 M	<0.1 M	<0.1 M	<0.2 M
Chloroethane	<0.01 mg/kg	TM116				<0.1 M	<0.1 M	<0.1 M	<0.2 M
Trichlorofluorormethane	<0.006 mg/kg	TM116				<0.06 M	<0.06 M	<0.06 M	<0.12 M
1,1-Dichloroethene	<0.01 mg/kg	TM116				<0.1 #	<0.1 #	<0.1 #	<0.2 #
Carbon Disulphide	<0.007 mg/kg	TM116				<0.07 M	<0.07 M	<0.07 M	<0.14 M
Dichloromethane	<0.01 mg/kg	TM116				<0.1 #	<0.1 #	<0.1 #	<0.2 #
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.2 M
trans-1,2-Dichloroethene	<0.01 mg/kg	TM116				<0.1 M	<0.1 M	<0.1 M	<0.2 M
1,1-Dichloroethane	<0.008 mg/kg	TM116				<0.08 M	<0.08 M	<0.08 M	<0.16 M
cis-1,2-Dichloroethene	<0.006 mg/kg	TM116				<0.06 M	<0.06 M	<0.06 M	<0.12 M
2,2-Dichloropropane	<0.01 mg/kg	TM116				<0.1	<0.1	<0.1	<0.2
Bromochloromethane	<0.01 mg/kg	TM116				<0.1 M	<0.1 M	<0.1 M	<0.2 M
Chloroform	<0.008 mg/kg	TM116				<0.08 M	<0.08 M	<0.08 M	<0.16 M
1,1,1-Trichloroethane	<0.007 mg/kg	TM116				<0.07 M	<0.07 M	<0.07 M	<0.14 M
1,1-Dichloropropene	<0.01 mg/kg	TM116				<0.1 M	<0.1 M	<0.1 M	<0.2 M
Carbontetrachloride	<0.01 mg/kg	TM116				<0.1 M	<0.1 M	<0.1 M	<0.2 M
1,2-Dichloroethane	<0.005 mg/kg	TM116				<0.05 M	<0.05 M	<0.05 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	0.947 M	0.698 M
Trichloroethene	<0.009 mg/kg	TM116				<0.09 #	<0.09 #	<0.09 #	<0.18 #
1,2-Dichloropropane	<0.01 mg/kg	TM116				<0.1 M	<0.1 M	<0.1 M	<0.2 M
Dibromomethane	<0.009 mg/kg	TM116				<0.09 M	<0.09 M	<0.09 M	<0.18 M
Bromodichloromethane	<0.007 mg/kg	TM116				<0.07 M	<0.07 M	<0.07 M	<0.14 M
cis-1,3-Dichloropropene	<0.01 mg/kg	TM116				<0.1 M	<0.1 M	<0.1 M	<0.2 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	0.581 M	0.334 M
trans-1,3-Dichloropropene	<0.01 mg/kg	TM116				<0.1	<0.1	<0.1	<0.2
1,1,2-Trichloroethane	<0.01 mg/kg	TM116				<0.1 M	<0.1 M	<0.1 M	<0.2 M
1,3-Dichloropropane	<0.007 mg/kg	TM116				<0.07 M	<0.07 M	<0.07 M	<0.14 M

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CH6	3CH6-V	3CJ5	3CJ5	3CJ5	3CJ5
			Depth (m)	0.50 - 0.50	0.80 - 0.80	0.50 - 0.50	1.20 - 1.20	1.90 - 1.90	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112759	18112771	18112747	18112751	18112755	18112763
			AGS Reference						
Tetrachloroethene	<0.005 mg/kg	TM116			<0.05 M	<0.05 M	<0.05 M	<0.1 M	
Dibromochloromethane	<0.01 mg/kg	TM116			<0.1 M	<0.1 M	<0.1 M	<0.2 M	
1,2-Dibromoethane	<0.01 mg/kg	TM116			<0.1 M	<0.1 M	<0.1 M	<0.2 M	
Chlorobenzene	<0.005 mg/kg	TM116			<0.05 M	<0.05 M	<0.05 M	<0.1 M	
1,1,1,2-Tetrachloroethane	<0.01 mg/kg	TM116			<0.1 M	<0.1 M	<0.1 M	<0.2 M	
Ethylbenzene	<0.004 mg/kg	TM116	<0.04 M	<0.04 M	<0.04 M	<0.04 M	0.0661 M	<0.08 M	
p/m-Xylene	<0.01 mg/kg	TM116	<0.1 #	<0.1 #	<0.1 #	<0.1 #	1.33 #	0.51 #	
o-Xylene	<0.01 mg/kg	TM116	<0.1 M	<0.1 M	<0.1 M	<0.1 M	0.59 M	<0.2 M	
Styrene	<0.01 mg/kg	TM116			<0.1 #	<0.1 #	0.396 #	<0.2 #	
Bromoform	<0.01 mg/kg	TM116			<0.1 M	<0.1 M	<0.1 M	<0.2 M	
Isopropylbenzene	<0.005 mg/kg	TM116			<0.05 #	<0.05 #	<0.05 #	<0.1 #	
1,1,2,2-Tetrachloroethane	<0.01 mg/kg	TM116			<0.1 #	<0.1 #	<0.1 #	<0.2 #	
1,2,3-Trichloropropane	<0.016 mg/kg	TM116			<0.16 M	<0.16 M	<0.16 M	<0.32 M	
Bromobenzene	<0.01 mg/kg	TM116			<0.1 M	<0.1 M	<0.1 M	<0.2 M	
Propylbenzene	<0.01 mg/kg	TM116			<0.1 M	<0.1 M	<0.1 M	<0.2 M	
2-Chlorotoluene	<0.009 mg/kg	TM116			<0.09 M	<0.09 M	<0.09 M	<0.18 M	
1,3,5-Trimethylbenzene	<0.008 mg/kg	TM116			<0.08 M	<0.08 M	1.34 M	0.275 M	
4-Chlorotoluene	<0.01 mg/kg	TM116			<0.1 M	<0.1 M	<0.1 M	<0.2 M	
tert-Butylbenzene	<0.014 mg/kg	TM116			<0.14 M	<0.14 M	<0.14 M	<0.28 M	
1,2,4-Trimethylbenzene	<0.009 mg/kg	TM116			<0.09 #	<0.09 #	1.56 #	0.357 #	
sec-Butylbenzene	<0.01 mg/kg	TM116			<0.1	<0.1	<0.1	<0.2	
4-Isopropyltoluene	<0.01 mg/kg	TM116			<0.1 M	<0.1 M	<0.1 M	<0.2 M	
1,3-Dichlorobenzene	<0.008 mg/kg	TM116			<0.08 M	<0.08 M	<0.08 M	<0.16 M	
1,4-Dichlorobenzene	<0.005 mg/kg	TM116			<0.05 M	<0.05 M	<0.05 M	<0.1 M	
n-Butylbenzene	<0.011 mg/kg	TM116			<0.11	<0.11	<0.11	<0.22	
1,2-Dichlorobenzene	<0.01 mg/kg	TM116			<0.1 M	<0.1 M	<0.1 M	<0.2 M	
1,2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116			<0.14 M	<0.14 M	<0.14 M	<0.28 M	
Tert-amyl methyl ether	<0.01 mg/kg	TM116			<0.1 #	<0.1 #	<0.1 #	<0.2 #	
1,2,4-Trichlorobenzene	<0.02 mg/kg	TM116			<0.2	<0.2	<0.2	<0.4	
Hexachlorobutadiene	<0.02 mg/kg	TM116			<0.2	<0.2	<0.2	<0.4	
Naphthalene	<0.013 mg/kg	TM116	0.156 M	<0.13 M	<0.13 M	<0.13 M	<2.6 3 M	<2.6 3 M	
1,2,3-Trichlorobenzene	<0.02 mg/kg	TM116			<0.2 #	<0.2 #	<0.2 #	<0.4 #	

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CH6	3CH6-V	3CJ5	3CJ5	3CJ5	3CJ5
			Depth (m)	0.50 - 0.50	0.80 - 0.80	0.50 - 0.50	1.20 - 1.20	1.90 - 1.90	2.20 - 2.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112759	18112771	18112747	18112751	18112755	18112763
			AGS Reference						
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	3.51	1.54

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CJ6	3CJ6	3CJ6	3CJ6	3CJ5-V	3CJ6-V
			Depth (m)	0.30 - 0.30	0.60 - 0.60	1.10 - 1.10	2.00 - 2.00	2.30 - 2.30	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112652	18112666	18112726	18112738	18112705	18112743
			AGS Reference						
Dibromofluoromethane**	%	TM116		103	101	65.3	102	107	126
Toluene-d8**	%	TM116		96.2	96.4	70.3	98.9	100	100
4-Bromofluorobenzene**	%	TM116		94.8	78.5	36.2	104	101	105
Dichlorodifluoromethane	<0.006 mg/kg	TM116		<0.06 M	<0.12 M	<0.06 M	<1.2 M		
Chloromethane	<0.007 mg/kg	TM116		<0.07 #	<0.14 #	<0.07 #	<1.4 #		
Vinyl Chloride	<0.006 mg/kg	TM116		<0.06 M	<0.12 M	<0.06 M	<1.2 M		
Bromomethane	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
Chloroethane	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
Trichlorofluorormethane	<0.006 mg/kg	TM116		<0.06 M	<0.12 M	<0.06 M	<1.2 M		
1,1-Dichloroethene	<0.01 mg/kg	TM116		<0.1 #	<0.2 #	<0.1 #	<2 #		
Carbon Disulphide	<0.007 mg/kg	TM116		<0.07 M	<0.14 M	<0.07 M	<1.4 M		
Dichloromethane	<0.01 mg/kg	TM116		<0.1 #	<0.2 #	<0.1 #	<2 #		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M	<0.1 M	<0.1 M
trans-1,2-Dichloroethene	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
1,1-Dichloroethane	<0.008 mg/kg	TM116		<0.08 M	<0.16 M	<0.08 M	<1.6 M		
cis-1,2-Dichloroethene	<0.006 mg/kg	TM116		<0.06 M	<0.12 M	<0.06 M	<1.2 M		
2,2-Dichloropropane	<0.01 mg/kg	TM116		<0.1	<0.2	<0.1	<2		
Bromochloromethane	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
Chloroform	<0.008 mg/kg	TM116		<0.08 M	<0.16 M	<0.08 M	<1.6 M		
1,1,1-Trichloroethane	<0.007 mg/kg	TM116		<0.07 M	<0.14 M	<0.07 M	<1.4 M		
1,1-Dichloropropene	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
Carbontetrachloride	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
1,2-Dichloroethane	<0.005 mg/kg	TM116		<0.05 M	<0.1 M	<0.05 M	<1 M		
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.18 M	0.109 M	<1.8 M	<0.09 M	<0.09 M
Trichloroethene	<0.009 mg/kg	TM116		<0.09 #	<0.18 #	<0.09 #	<1.8 #		
1,2-Dichloropropane	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
Dibromomethane	<0.009 mg/kg	TM116		<0.09 M	<0.18 M	<0.09 M	<1.8 M		
Bromodichloromethane	<0.007 mg/kg	TM116		<0.07 M	<0.14 M	<0.07 M	<1.4 M		
cis-1,3-Dichloropropene	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.14 M	<0.07 M	<1.4 M	<0.07 M	<0.07 M
trans-1,3-Dichloropropene	<0.01 mg/kg	TM116		<0.1	<0.2	<0.1	<2		
1,1,2-Trichloroethane	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
1,3-Dichloropropane	<0.007 mg/kg	TM116		<0.07 M	<0.14 M	<0.07 M	<1.4 M		

PRELIMINARY/INTERIM REPORT

SDG: 180814-70 **Client Reference:** **Report Number:** 469236
Location: Llanwern **Order Number:** LLA472 **Superseded Report:**

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CJ6	3CJ6	3CJ6	3CJ6	3CJ5-V	3CJ6-V
			Depth (m)	0.30 - 0.30	0.60 - 0.60	1.10 - 1.10	2.00 - 2.00	2.30 - 2.30	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112652	18112666	18112726	18112738	18112705	18112743
			AGS Reference						
Tetrachloroethene	<0.005 mg/kg	TM116		<0.05 M	<0.1 M	<0.05 M	<1 M		
Dibromochloromethane	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
1,2-Dibromoethane	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
Chlorobenzene	<0.005 mg/kg	TM116		<0.05 M	<0.1 M	<0.05 M	<1 M		
1,1,1,2-Tetrachloroethane	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.08 M	<0.04 M	<0.8 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.2 #	<0.1 #	<2 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M	<0.1 M	<0.1 M
Styrene	<0.01 mg/kg	TM116		<0.1 #	<0.2 #	<0.1 #	<2 #		
Bromoform	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
Isopropylbenzene	<0.005 mg/kg	TM116		<0.05 #	<0.1 #	<0.05 #	<1 #		
1,1,2,2-Tetrachloroethane	<0.01 mg/kg	TM116		<0.1 #	<0.2 #	<0.1 #	<2 #		
1,2,3-Trichloropropane	<0.016 mg/kg	TM116		<0.16 M	<0.32 M	<0.16 M	<3.2 M		
Bromobenzene	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
Propylbenzene	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
2-Chlorotoluene	<0.009 mg/kg	TM116		<0.09 M	<0.18 M	<0.09 M	<1.8 M		
1,3,5-Trimethylbenzene	<0.008 mg/kg	TM116		<0.08 M	<0.16 M	<0.08 M	<1.6 M		
4-Chlorotoluene	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
tert-Butylbenzene	<0.014 mg/kg	TM116		<0.14 M	<0.28 M	<0.14 M	<2.8 M		
1,2,4-Trimethylbenzene	<0.009 mg/kg	TM116		<0.09 #	<0.18 #	<0.09 #	<1.8 #		
sec-Butylbenzene	<0.01 mg/kg	TM116		<0.1	<0.2	<0.1	<2		
4-Isopropyltoluene	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
1,3-Dichlorobenzene	<0.008 mg/kg	TM116		<0.08 M	<0.16 M	<0.08 M	<1.6 M		
1,4-Dichlorobenzene	<0.005 mg/kg	TM116		<0.05 M	<0.1 M	<0.05 M	<1 M		
n-Butylbenzene	<0.011 mg/kg	TM116		<0.11	<0.22	<0.11	<2.2		
1,2-Dichlorobenzene	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<2 M		
1,2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116		<0.14 M	<0.28 M	<0.14 M	<2.8 M		
Tert-amyl methyl ether	<0.01 mg/kg	TM116		<0.1 #	<0.2 #	<0.1 #	<2 #		
1,2,4-Trichlorobenzene	<0.02 mg/kg	TM116		<0.2	<0.4	<0.2	<4		
Hexachlorobutadiene	<0.02 mg/kg	TM116		<0.2	<0.4	<0.2	<4		
Naphthalene	<0.013 mg/kg	TM116		0.206 M	2.53 M	<0.13 M	<2.6 M	<0.13 M	<0.13 M
1,2,3-Trichlorobenzene	<0.02 mg/kg	TM116		<0.2 #	<0.4 #	<0.2 #	<4 #		

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3CJ6	3CJ6	3CJ6	3CJ6	3CJ5-V	3CJ6-V
			Depth (m)	0.30 - 0.30	0.60 - 0.60	1.10 - 1.10	2.00 - 2.00	2.30 - 2.30	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018	14/08/2018
			SDG Ref	180814-70	180814-70	180814-70	180814-70	180814-70	180814-70
			Lab Sample No.(s)	18112652	18112666	18112726	18112738	18112705	18112743
			AGS Reference						
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.8	<0.4	<8	<0.4	<0.4

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CB2 2.20 - 2.20 SOLID 13/08/2018 00:00:00 14/08/2018 18:52:12 180814-70 18112782 TM048	17/08/2018	James Richards	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CC2 1.00 - 1.00 SOLID 13/08/2018 00:00:00 14/08/2018 19:22:26 180814-70 18112799 TM048	17/08/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Trace
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CD2 2.00 - 2.00 SOLID 13/08/2018 00:00:00 14/08/2018 16:01:38 180814-70 18112670 TM048	17/08/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CE2 1.00 - 1.00 SOLID 13/08/2018 00:00:00 14/08/2018 18:11:56 180814-70 18112687 TM048	17/08/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Trace
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CF2 1.00 - 1.00 SOLID 13/08/2018 00:00:00 14/08/2018 18:52:46 180814-70 18112701 TM048	17/08/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CG2 0.90 - 0.90 SOLID 13/08/2018 00:00:00 14/08/2018 18:49:46 180814-70 18112721 TM048	17/08/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

PRELIMINARY/INTERIM REPORT

SDG: 180814-70 **Client Reference:** **Report Number:** 469236
Location: Llanwern **Order Number:** LLA472 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CH6 0.50 - 0.50 SOLID 13/08/2018 00:00:00 14/08/2018 18:49:25 180814-70 18112759 TM048	17/08/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CJ5 0.50 - 0.50 SOLID 13/08/2018 00:00:00 14/08/2018 17:37:17 180814-70 18112747 TM048	17/08/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CJ5 1.90 - 1.90 SOLID 13/08/2018 00:00:00 14/08/2018 16:03:43 180814-70 18112755 TM048	17/08/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CJ6 0.30 - 0.30 SOLID 13/08/2018 00:00:00 14/08/2018 18:48:20 180814-70 18112652 TM048	17/08/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CJ6 1.10 - 1.10 SOLID 13/08/2018 00:00:00 14/08/2018 18:31:44 180814-70 18112726 TM048	17/08/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3CB2 2.20 - 2.20 SOLID 13/08/2018 00:00:00 14/08/2018 18:52:42 180814-70 18112782 TM304	None (#)	N/A	0.0032 (#)	<0.001 (#)	0.0032 (#)

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	2.88
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.2
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112652
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ6
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0383	<0.01	0.383	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0171	<0.001	0.171	<0.01	-	-	-
Copper	0.00208	<0.0003	0.0208	<0.003	-	-	-
Lead	0.00239	<0.0002	0.0239	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00128	<0.001	0.0128	<0.01	-	-	-
Vanadium	0.00114	<0.001	0.0114	<0.01	-	-	-
Zinc	0.00283	<0.001	0.0283	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.467	<0.019	4.67	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000119	<0.00001	0.00119	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000456	<0.000005	0.000456	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000652	<0.000005	0.000652	<0.00005	-	-	-
Anthracene by GCMS	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Phenanthrene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Fluorene by GCMS	0.000029	<0.000005	0.00029	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000532	<0.000005	0.000532	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000224	<0.000002	0.0000224	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000446	<0.000082	0.00446	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	11.84
Conductivity (µS/cm)	3,170.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	2.88
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.2
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112652
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ6
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	11.84
Conductivity (µS/cm)	3,170.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.115	**Natural Moisture Content (%)**	28.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	78
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112661
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CD2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0151	<0.01	0.151	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00229	<0.0005	0.0229	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00132	<0.0003	0.0132	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00341	<0.003	0.0341	<0.03	-	-	-
Nickel	0.000611	<0.0004	0.00611	<0.004	-	-	-
Selenium	0.00156	<0.001	0.0156	<0.01	-	-	-
Vanadium	0.00321	<0.001	0.0321	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0707	<0.019	0.707	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00345	<0.00001	0.0345	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000232	<0.000005	0.000232	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000383	<0.000005	0.000383	<0.00005	-	-	-
Anthracene by GCMS	0.00000648	<0.000005	0.0000648	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000255	<0.000005	0.000255	<0.00005	-	-	-
Fluorene by GCMS	0.00000701	<0.000005	0.0000701	<0.00005	-	-	-
Chrysene by GCMS	0.0000247	<0.000005	0.000247	<0.00005	-	-	-
Pyrene by GCMS	0.0000278	<0.000005	0.000278	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000242	<0.000005	0.000242	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00004	<0.000005	0.0004	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000212	<0.000002	0.000212	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000614	<0.000005	0.0000614	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000273	<0.000005	0.000273	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00376	<0.000082	0.0376	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	8.94
Conductivity (µS/cm)	70.90
Temperature (°C)	22.60
Volume Leachant (Litres)	0.875

Mcerts Certification does not apply to leachates

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.115	**Natural Moisture Content (%)**	28.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	78
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112661
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CD2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	8.94
Conductivity (µS/cm)	70.90
Temperature (°C)	22.60
Volume Leachant (Litres)	0.875

Mcerts Certification does not apply to leachates

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112666
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ6
Depth (m)	0.60 - 0.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0281	<0.01	0.281	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00153	<0.0005	0.0153	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00471	<0.001	0.0471	<0.01	-	-	-
Copper	0.00557	<0.0003	0.0557	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00085	<0.0004	0.0085	<0.004	-	-	-
Selenium	0.00193	<0.001	0.0193	<0.01	-	-	-
Vanadium	0.0159	<0.001	0.159	<0.01	-	-	-
Zinc	0.002	<0.001	0.02	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.507	<0.019	5.07	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000779	<0.00001	0.00779	<0.0001	-	-	-
Acenaphthene by GCMS	0.000197	<0.000005	0.00197	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00178	<0.000005	0.0178	<0.00005	-	-	-
Fluoranthene by GCMS	0.00425	<0.000005	0.0425	<0.00005	-	-	-
Anthracene by GCMS	0.000713	<0.000005	0.00713	<0.00005	-	-	-
Phenanthrene by GCMS	0.00316	<0.000005	0.0316	<0.00005	-	-	-
Fluorene by GCMS	0.00124	<0.000005	0.0124	<0.00005	-	-	-
Chrysene by GCMS	0.000289	<0.000005	0.00289	<0.00005	-	-	-
Pyrene by GCMS	0.00288	<0.000005	0.0288	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000344	<0.000005	0.00344	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00031	<0.000005	0.0031	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000169	<0.000002	0.00169	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000336	<0.000005	0.000336	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000974	<0.000005	0.000974	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0165	<0.000082	0.165	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	11.11
Conductivity (µS/cm)	350.00
Temperature (°C)	23.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
22/08/2018 13:34:00

13:33:20 22/08/2018

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112666
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ6
Depth (m)	0.60 - 0.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.02	<0.01	0.2	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.02	<0.01	0.2	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.026	<0.01	0.26	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	11.11
Conductivity (µS/cm)	350.00
Temperature (°C)	23.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

13:33:20 22/08/2018

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112670
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CD2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0126	<0.01	0.126	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00238	<0.0005	0.0238	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00325	<0.0003	0.0325	<0.003	-	-	-
Lead	0.000433	<0.0002	0.00433	<0.002	-	-	-
Manganese	0.0062	<0.003	0.062	<0.03	-	-	-
Nickel	0.000758	<0.0004	0.00758	<0.004	-	-	-
Selenium	0.0012	<0.001	0.012	<0.01	-	-	-
Vanadium	0.00345	<0.001	0.0345	<0.01	-	-	-
Zinc	0.0013	<0.001	0.013	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.685	<0.019	6.85	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000371	<0.00001	0.00371	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000542	<0.000005	0.000542	<0.00005	-	-	-
Anthracene by GCMS	0.00000649	<0.000005	0.0000649	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000261	<0.000005	0.000261	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000302	<0.000005	0.000302	<0.00005	-	-	-
Pyrene by GCMS	0.0000478	<0.000005	0.000478	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000282	<0.000005	0.000282	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000455	<0.000005	0.000455	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000215	<0.000005	0.000215	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000271	<0.000002	0.000271	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000605	<0.000005	0.0000605	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000317	<0.000005	0.000317	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000193	<0.000005	0.000193	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000727	<0.000082	0.00727	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	8.52
Conductivity (µS/cm)	57.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates
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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112670
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CD2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	8.52
Conductivity (µS/cm)	57.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112683
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CE2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000192	<0.00001	0.000192	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0124	<0.01	0.124	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00591	<0.0005	0.0591	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00115	<0.0003	0.0115	<0.003	-	-	-
Lead	0.00095	<0.0002	0.0095	<0.002	-	-	-
Manganese	0.00381	<0.003	0.0381	<0.03	-	-	-
Nickel	0.000969	<0.0004	0.00969	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0124	<0.001	0.124	<0.01	-	-	-
Zinc	0.00393	<0.001	0.0393	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.101	<0.019	1.01	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000254	<0.00001	0.000254	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000767	<0.000005	0.0000767	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000354	<0.000005	0.000354	<0.00005	-	-	-
Anthracene by GCMS	0.00000662	<0.000005	0.0000662	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000172	<0.000005	0.000172	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000312	<0.000005	0.000312	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000289	<0.000005	0.000289	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000188	<0.000002	0.000188	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000393	<0.000005	0.000393	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000238	<0.000082	0.00238	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	8.99
Conductivity (µS/cm)	66.90
Temperature (°C)	22.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112683
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CE2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	8.99
Conductivity (µS/cm)	66.90
Temperature (°C)	22.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112687
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CE2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000253	<0.00001	0.000253	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0183	<0.01	0.183	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00782	<0.0005	0.0782	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00347	<0.0003	0.0347	<0.003	-	-	-
Lead	0.00372	<0.0002	0.0372	<0.002	-	-	-
Manganese	0.0202	<0.003	0.202	<0.03	-	-	-
Nickel	0.00341	<0.0004	0.0341	<0.004	-	-	-
Selenium	0.00104	<0.001	0.0104	<0.01	-	-	-
Vanadium	0.0426	<0.001	0.426	<0.01	-	-	-
Zinc	0.0321	<0.001	0.321	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.485	<0.019	4.85	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000304	<0.00001	0.000304	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000472	<0.000005	0.000472	<0.00005	-	-	-
Anthracene by GCMS	0.00000886	<0.000005	0.0000886	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000315	<0.000005	0.000315	<0.00005	-	-	-
Fluorene by GCMS	0.000014	<0.000005	0.00014	<0.00005	-	-	-
Chrysene by GCMS	0.0000274	<0.000005	0.000274	<0.00005	-	-	-
Pyrene by GCMS	0.0000414	<0.000005	0.000414	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000731	<0.000005	0.0000731	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000067	<0.000005	0.00067	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000028	<0.000005	0.00028	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000246	<0.000002	0.000246	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000378	<0.000005	0.000378	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000279	<0.000005	0.000279	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000393	<0.000082	0.00393	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	8.27
Conductivity (µS/cm)	61.60
Temperature (°C)	22.80
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates
22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112687
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CE2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	8.27
Conductivity (µS/cm)	61.60
Temperature (°C)	22.80
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112697
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CF2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000332	<0.00001	0.000332	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00145	<0.0005	0.0145	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00312	<0.0003	0.0312	<0.003	-	-	-
Lead	0.00189	<0.0002	0.0189	<0.002	-	-	-
Manganese	0.0101	<0.003	0.101	<0.03	-	-	-
Nickel	0.000995	<0.0004	0.00995	<0.004	-	-	-
Selenium	0.00158	<0.001	0.0158	<0.01	-	-	-
Vanadium	0.00403	<0.001	0.0403	<0.01	-	-	-
Zinc	0.00843	<0.001	0.0843	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.373	<0.019	3.73	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000017	<0.00001	0.00017	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000611	<0.000005	0.000611	<0.00005	-	-	-
Anthracene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000522	<0.000005	0.000522	<0.00005	-	-	-
Fluorene by GCMS	0.00000669	<0.000005	0.0000669	<0.00005	-	-	-
Chrysene by GCMS	0.0000502	<0.000005	0.000502	<0.00005	-	-	-
Pyrene by GCMS	0.0000474	<0.000005	0.000474	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000646	<0.000005	0.000646	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000271	<0.000005	0.000271	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000272	<0.000002	0.000272	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000996	<0.000005	0.0000996	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000505	<0.000005	0.000505	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000242	<0.000005	0.000242	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000471	<0.000082	0.00471	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	9.27
Conductivity (µS/cm)	87.50
Temperature (°C)	22.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112697
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CF2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	9.27
Conductivity (µS/cm)	87.50
Temperature (°C)	22.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112701
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CF2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000137	<0.00001	0.000137	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0119	<0.01	0.119	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00335	<0.0005	0.0335	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00146	<0.0003	0.0146	<0.003	-	-	-
Lead	0.000256	<0.0002	0.00256	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00124	<0.001	0.0124	<0.01	-	-	-
Vanadium	0.0108	<0.001	0.108	<0.01	-	-	-
Zinc	0.0018	<0.001	0.018	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.574	<0.019	5.74	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000276	<0.00001	0.00276	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000204	<0.000005	0.000204	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000436	<0.000005	0.000436	<0.00005	-	-	-
Anthracene by GCMS	0.00000637	<0.000005	0.0000637	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Fluorene by GCMS	0.00000677	<0.000005	0.0000677	<0.00005	-	-	-
Chrysene by GCMS	0.0000447	<0.000005	0.000447	<0.00005	-	-	-
Pyrene by GCMS	0.0000348	<0.000005	0.000348	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000277	<0.000005	0.000277	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000895	<0.000005	0.000895	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000332	<0.000005	0.000332	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000038	<0.000002	0.00038	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000709	<0.000005	0.000709	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000426	<0.000005	0.000426	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000777	<0.000082	0.00777	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	7.82
Conductivity (µS/cm)	71.20
Temperature (°C)	22.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112701
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CF2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	7.82
Conductivity (µS/cm)	71.20
Temperature (°C)	22.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

13:33:20 22/08/2018

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112715
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CG2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0196	<0.01	0.196	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00161	<0.0005	0.0161	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00286	<0.0003	0.0286	<0.003	-	-	-
Lead	0.000479	<0.0002	0.00479	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000562	<0.0004	0.00562	<0.004	-	-	-
Selenium	0.00143	<0.001	0.0143	<0.01	-	-	-
Vanadium	0.00355	<0.001	0.0355	<0.01	-	-	-
Zinc	0.00123	<0.001	0.0123	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.702	<0.019	7.02	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00164	<0.00001	0.0164	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000265	<0.000005	0.000265	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000191	<0.000005	0.000191	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Pyrene by GCMS	0.0000234	<0.000005	0.000234	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000371	<0.000005	0.000371	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000146	<0.000002	0.000146	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000293	<0.000005	0.000293	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000203	<0.000005	0.000203	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00187	<0.000082	0.0187	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	8.25
Conductivity (µS/cm)	91.80
Temperature (°C)	22.90
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112715
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CG2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	8.25
Conductivity (µS/cm)	91.80
Temperature (°C)	22.90
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112721
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CG2
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000451	<0.00001	0.000451	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.017	<0.01	0.17	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0031	<0.0005	0.031	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00314	<0.0003	0.0314	<0.003	-	-	-
Lead	0.000383	<0.0002	0.00383	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0008	<0.0004	0.008	<0.004	-	-	-
Selenium	0.00134	<0.001	0.0134	<0.01	-	-	-
Vanadium	0.00838	<0.001	0.0838	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.894	<0.019	8.94	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000222	<0.00001	0.00222	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000344	<0.000005	0.000344	<0.00005	-	-	-
Fluoranthene by GCMS	0.000394	<0.000005	0.00394	<0.00005	-	-	-
Anthracene by GCMS	0.0000418	<0.000005	0.000418	<0.00005	-	-	-
Phenanthrene by GCMS	0.000174	<0.000005	0.00174	<0.00005	-	-	-
Fluorene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Chrysene by GCMS	0.000194	<0.000005	0.00194	<0.00005	-	-	-
Pyrene by GCMS	0.000254	<0.000005	0.00254	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000884	<0.000005	0.000884	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00027	<0.000005	0.0027	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0001	<0.000002	0.001	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00189	<0.000082	0.0189	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	8.69
Conductivity (µS/cm)	82.40
Temperature (°C)	23.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112721
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CG2
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	8.69
Conductivity (µS/cm)	82.40
Temperature (°C)	23.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112726
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ6
Depth (m)	1.10 - 1.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.371	<0.01	3.71	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00563	<0.0005	0.0563	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00196	<0.001	0.0196	<0.01	-	-	-
Copper	0.00605	<0.0003	0.0605	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0182	<0.001	0.182	<0.01	-	-	-
Vanadium	0.0387	<0.001	0.387	<0.01	-	-	-
Zinc	0.00185	<0.001	0.0185	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000363	<0.00001	0.000363	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000038	<0.000005	0.00038	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000365	<0.000005	0.000365	<0.00005	-	-	-
Anthracene by GCMS	0.00000508	<0.000005	0.0000508	<0.00005	-	-	-
Phenanthrene by GCMS	0.000031	<0.000005	0.00031	<0.00005	-	-	-
Fluorene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000319	<0.000005	0.000319	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000876	<0.000005	0.0000876	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000556	<0.000002	0.0000556	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000204	<0.000082	0.00204	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	10.85
Conductivity (µS/cm)	357.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112726
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ6
Depth (m)	1.10 - 1.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	10.85
Conductivity (µS/cm)	357.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112738
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ6
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.51	<0.01	15.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0064	<0.0005	0.064	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00652	<0.0003	0.0652	<0.003	-	-	-
Lead	0.00152	<0.0002	0.0152	<0.002	-	-	-
Manganese	0.0743	<0.003	0.743	<0.03	-	-	-
Nickel	0.00376	<0.0004	0.0376	<0.004	-	-	-
Selenium	0.00377	<0.001	0.0377	<0.01	-	-	-
Vanadium	0.00616	<0.001	0.0616	<0.01	-	-	-
Zinc	0.00502	<0.001	0.0502	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.859	<0.019	8.59	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000201	<0.00001	0.000201	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000076	<0.000005	0.00076	<0.00005	-	-	-
Anthracene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Phenanthrene by GCMS	0.000055	<0.000005	0.00055	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000161	<0.000005	0.000161	<0.00005	-	-	-
Pyrene by GCMS	0.0000551	<0.000005	0.000551	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000268	<0.000005	0.000268	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000133	<0.000005	0.000133	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000133	<0.000002	0.000133	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000088	<0.000005	0.000088	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000811	<0.000005	0.0000811	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000319	<0.000082	0.00319	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	8.13
Conductivity (µS/cm)	248.00
Temperature (°C)	22.70
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

13:33:20 22/08/2018

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112738
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ6
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	8.13
Conductivity (µS/cm)	248.00
Temperature (°C)	22.70
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

13:33:20 22/08/2018

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112747
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000119	<0.00001	0.000119	<0.0001	-	-	-
Ammoniacal Nitrogen as N	7.87	<0.01	78.7	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00636	<0.0005	0.0636	<0.005	-	-	-
Cadmium	0.000175	<0.00008	0.00175	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0105	<0.0003	0.105	<0.003	-	-	-
Lead	0.0192	<0.0002	0.192	<0.002	-	-	-
Manganese	0.131	<0.003	1.31	<0.03	-	-	-
Nickel	0.00631	<0.0004	0.0631	<0.004	-	-	-
Selenium	0.00199	<0.001	0.0199	<0.01	-	-	-
Vanadium	0.0135	<0.001	0.135	<0.01	-	-	-
Zinc	0.0113	<0.001	0.113	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.386	<0.019	3.86	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000708	<0.00001	0.000708	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000201	<0.000005	0.000201	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000232	<0.000005	0.000232	<0.00005	-	-	-
Anthracene by GCMS	0.00000553	<0.000005	0.0000553	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000292	<0.000005	0.000292	<0.00005	-	-	-
Fluorene by GCMS	0.00000577	<0.000005	0.0000577	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000186	<0.000005	0.000186	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000735	<0.000005	0.0000735	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000201	<0.000082	0.00201	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	7.90
Conductivity (µS/cm)	150.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

13:33:20 22/08/2018

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112747
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	7.90
Conductivity (µS/cm)	150.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112751
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ5
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.272	<0.01	2.72	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00108	<0.0005	0.0108	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00151	<0.001	0.0151	<0.01	-	-	-
Copper	0.00454	<0.0003	0.0454	<0.003	-	-	-
Lead	0.013	<0.0002	0.13	<0.002	-	-	-
Manganese	0.0172	<0.003	0.172	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0139	<0.001	0.139	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000139	<0.00001	0.000139	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000502	<0.000005	0.0000502	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	12.36
Conductivity (µS/cm)	5,070.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

13:33:20 22/08/2018

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112751
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ5
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	16-Aug-2018
pH (pH Units)	12.36
Conductivity (µS/cm)	5,070.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

13:33:20 22/08/2018

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112755
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ5
Depth (m)	1.90 - 1.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.59	<0.01	15.9	<0.1	-	-	-
Total Cyanide (W)	0.153	<0.05	1.53	<0.5	-	-	-
Arsenic	0.0059	<0.0005	0.059	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00174	<0.001	0.0174	<0.01	-	-	-
Copper	0.017	<0.0003	0.17	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00261	<0.0004	0.0261	<0.004	-	-	-
Selenium	0.0093	<0.001	0.093	<0.01	-	-	-
Vanadium	0.0543	<0.001	0.543	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.796	<0.019	7.96	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.075	<0.001	0.75	<0.01	-	-	-
Acenaphthene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene by GCMS	0.00169	<0.0005	0.0169	<0.005	-	-	-
Fluoranthene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Anthracene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Phenanthrene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Fluorene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Chrysene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Pyrene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Benz(a)anthracene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Benzo(a)pyrene by GCMS	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Benzo(ghi)perylene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
PAH 16 EPA Total by GCMS	0.0767	<0.0082	0.767	<0.082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	17.7	<0.05	177	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	10.61
Conductivity (µS/cm)	281.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112755
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ5
Depth (m)	1.90 - 1.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.032	<0.01	0.32	<0.1	-	-	-
Aliphatics >C10-C12	10.6	<0.01	106	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.018	<0.01	0.18	<0.1	-	-	-
Aromatics >C7-C8	0.01	<0.01	0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.052	<0.01	0.52	<0.1	-	-	-
Aromatics >EC10-EC12	7.03	<0.01	70.3	<0.1	-	-	-
Aromatics >EC12-EC16	0.554	<0.01	5.54	<0.1	-	-	-
Aromatics >EC16-EC21	0.232	<0.01	2.32	<0.1	-	-	-
Aromatics >EC21-EC35	0.05	<0.01	0.5	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.836	<0.01	8.36	<0.1	-	-	-
Benzene by GC	0.018	<0.007	0.18	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	18.5	<0.01	185	<0.1	-	-	-
Toluene by GC	0.01	<0.004	0.1	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.018	<0.008	0.18	<0.08	-	-	-
o Xylene by GC	0.012	<0.003	0.12	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.03	<0.011	0.3	<0.11	-	-	-
Sum of BTEX by GC	0.058	<0.028	0.58	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	10.61
Conductivity (µS/cm)	281.00
Temperature (°C)	22.60
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112759
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CH6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0217	<0.01	0.217	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00521	<0.0005	0.0521	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0059	<0.0003	0.059	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00135	<0.0004	0.0135	<0.004	-	-	-
Selenium	0.00303	<0.001	0.0303	<0.01	-	-	-
Vanadium	0.0166	<0.001	0.166	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.265	<0.019	2.65	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00145	<0.00001	0.0145	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000438	<0.000005	0.000438	<0.00005	-	-	-
Anthracene by GCMS	0.0000102	<0.000005	0.000102	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000336	<0.000005	0.000336	<0.00005	-	-	-
Fluorene by GCMS	0.00000811	<0.000005	0.0000811	<0.00005	-	-	-
Chrysene by GCMS	0.0000184	<0.000005	0.000184	<0.00005	-	-	-
Pyrene by GCMS	0.0000295	<0.000005	0.000295	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000204	<0.000005	0.000204	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000285	<0.000005	0.000285	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000147	<0.000002	0.000147	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00171	<0.000082	0.0171	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	6.98
Conductivity (µS/cm)	220.00
Temperature (°C)	22.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates
22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112759
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CH6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	6.98
Conductivity (µS/cm)	220.00
Temperature (°C)	22.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112763
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ5
Depth (m)	2.20 - 2.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.133	<0.01	1.33	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00563	<0.0005	0.0563	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00767	<0.0003	0.0767	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.113	<0.003	1.13	<0.03	-	-	-
Nickel	0.00298	<0.0004	0.0298	<0.004	-	-	-
Selenium	0.00575	<0.001	0.0575	<0.01	-	-	-
Vanadium	0.00229	<0.001	0.0229	<0.01	-	-	-
Zinc	0.00314	<0.001	0.0314	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00415	<0.00001	0.0415	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000359	<0.000005	0.000359	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000721	<0.000005	0.00721	<0.00005	-	-	-
Fluoranthene by GCMS	0.000271	<0.000005	0.00271	<0.00005	-	-	-
Anthracene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Phenanthrene by GCMS	0.000623	<0.000005	0.00623	<0.00005	-	-	-
Fluorene by GCMS	0.000296	<0.000005	0.00296	<0.00005	-	-	-
Chrysene by GCMS	0.0000409	<0.000005	0.000409	<0.00005	-	-	-
Pyrene by GCMS	0.000176	<0.000005	0.00176	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000426	<0.000005	0.000426	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000339	<0.000005	0.000339	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000135	<0.000005	0.000135	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000185	<0.000002	0.000185	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000842	<0.000005	0.0000842	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00655	<0.000082	0.0655	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	7.65
Conductivity (µS/cm)	257.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates
22/08/2018 13:34:00

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112763
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CJ5
Depth (m)	2.20 - 2.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	7.65
Conductivity (µS/cm)	257.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.4
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112775
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CB2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0303	<0.01	0.303	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00385	<0.0005	0.0385	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.001	<0.001	0.01	<0.01	-	-	-
Copper	0.00321	<0.0003	0.0321	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000577	<0.0004	0.00577	<0.004	-	-	-
Selenium	0.00333	<0.001	0.0333	<0.01	-	-	-
Vanadium	0.14	<0.001	1.4	<0.01	-	-	-
Zinc	0.0019	<0.001	0.019	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000535	<0.00001	0.000535	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000906	<0.000005	0.0000906	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000914	<0.000005	0.000914	<0.00005	-	-	-
Anthracene by GCMS	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000557	<0.000005	0.000557	<0.00005	-	-	-
Fluorene by GCMS	0.00000689	<0.000005	0.0000689	<0.00005	-	-	-
Chrysene by GCMS	0.0000407	<0.000005	0.000407	<0.00005	-	-	-
Pyrene by GCMS	0.0000725	<0.000005	0.000725	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000034	<0.000005	0.00034	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000462	<0.000005	0.000462	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000219	<0.000002	0.000219	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000502	<0.000082	0.00502	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	10.66
Conductivity (µS/cm)	255.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.4
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112775
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CB2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	10.66
Conductivity (µS/cm)	255.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112782
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CB2
Depth (m)	2.20 - 2.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0131	<0.01	0.131	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00271	<0.0005	0.0271	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00322	<0.0003	0.0322	<0.003	-	-	-
Lead	0.000553	<0.0002	0.00553	<0.002	-	-	-
Manganese	0.00372	<0.003	0.0372	<0.03	-	-	-
Nickel	0.000704	<0.0004	0.00704	<0.004	-	-	-
Selenium	0.00156	<0.001	0.0156	<0.01	-	-	-
Vanadium	0.00695	<0.001	0.0695	<0.01	-	-	-
Zinc	0.00408	<0.001	0.0408	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.507	<0.019	5.07	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00022	<0.00001	0.0022	<0.0001	-	-	-
Acenaphthene by GCMS	0.000199	<0.000005	0.00199	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00225	<0.000005	0.0225	<0.00005	-	-	-
Fluoranthene by GCMS	0.0154	<0.000005	0.154	<0.00005	-	-	-
Anthracene by GCMS	0.00168	<0.000005	0.0168	<0.00005	-	-	-
Phenanthrene by GCMS	0.000762	<0.000005	0.00762	<0.00005	-	-	-
Fluorene by GCMS	0.000503	<0.000005	0.00503	<0.00005	-	-	-
Chrysene by GCMS	0.00254	<0.000005	0.0254	<0.00005	-	-	-
Pyrene by GCMS	0.0108	<0.000005	0.108	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00244	<0.000005	0.0244	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00352	<0.000005	0.0352	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00131	<0.000005	0.0131	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00222	<0.000002	0.0222	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000329	<0.000005	0.00329	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00213	<0.000005	0.0213	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00168	<0.000005	0.0168	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.048	<0.000082	0.48	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	8.61
Conductivity (µS/cm)	102.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112782
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CB2
Depth (m)	2.20 - 2.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.035	<0.01	0.35	<0.1	-	-	-
Aromatics >EC21-EC35	0.046	<0.01	0.46	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.081	<0.01	0.81	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.082	<0.01	0.82	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	8.61
Conductivity (µS/cm)	102.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112786
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CB2
Depth (m)	2.80 - 2.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0128	<0.01	0.128	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00244	<0.0005	0.0244	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00115	<0.0003	0.0115	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00111	<0.001	0.0111	<0.01	-	-	-
Vanadium	0.0167	<0.001	0.167	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000534	<0.00001	0.000534	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000387	<0.000005	0.000387	<0.00005	-	-	-
Fluoranthene by GCMS	0.000372	<0.000005	0.00372	<0.00005	-	-	-
Anthracene by GCMS	0.0000441	<0.000005	0.000441	<0.00005	-	-	-
Phenanthrene by GCMS	0.000181	<0.000005	0.00181	<0.00005	-	-	-
Fluorene by GCMS	0.0000283	<0.000005	0.000283	<0.00005	-	-	-
Chrysene by GCMS	0.000118	<0.000005	0.00118	<0.00005	-	-	-
Pyrene by GCMS	0.000275	<0.000005	0.00275	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0001	<0.000005	0.001	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000145	<0.000005	0.00145	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000639	<0.000005	0.000639	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000083	<0.000002	0.00083	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000617	<0.000005	0.000617	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00168	<0.000082	0.0168	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	9.13
Conductivity (µS/cm)	82.70
Temperature (°C)	23.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

13:33:20 22/08/2018

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112786
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CB2
Depth (m)	2.80 - 2.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	9.13
Conductivity (µS/cm)	82.70
Temperature (°C)	23.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

13:33:20 22/08/2018

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112799
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CC2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0178	<0.01	0.178	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00763	<0.0005	0.0763	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00181	<0.0003	0.0181	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000689	<0.0004	0.00689	<0.004	-	-	-
Selenium	0.00203	<0.001	0.0203	<0.01	-	-	-
Vanadium	0.0153	<0.001	0.153	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.001	<0.00001	0.01	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000716	<0.000005	0.000716	<0.00005	-	-	-
Anthracene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000333	<0.000005	0.000333	<0.00005	-	-	-
Fluorene by GCMS	0.00000667	<0.000005	0.0000667	<0.00005	-	-	-
Chrysene by GCMS	0.0000501	<0.000005	0.000501	<0.00005	-	-	-
Pyrene by GCMS	0.000057	<0.000005	0.00057	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000375	<0.000005	0.000375	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000724	<0.000005	0.000724	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000288	<0.000005	0.000288	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000383	<0.000002	0.000383	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000009	<0.000005	0.00009	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000565	<0.000005	0.000565	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000343	<0.000005	0.000343	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00152	<0.000082	0.0152	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.059	<0.05	0.59	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	8.31
Conductivity (µS/cm)	111.00
Temperature (°C)	22.80
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

13:33:20 22/08/2018

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180814-70
Lab Sample Number(s)	18112799
Sampled Date	13-Aug-2018
Customer Sample Ref.	3CC2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.032	<0.01	0.32	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.022	<0.01	0.22	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.06	<0.01	0.6	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Aug-2018
pH (pH Units)	8.31
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Temperature (°C)	22.80
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Mcerts Certification does not apply to leachates

22/08/2018 13:34:00

13:33:20 22/08/2018

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	18112775	18112782	18112786	18112793	18112799	18112656	18112661	18112670	18112676	18112683
Customer Sample Ref.	3CB2	3CB2	3CB2	3CB2-V	3CC2	3CC2-V	3CD2	3CD2	3CD2-V	3CE2
AGS Ref.										
Depth	1.00 - 1.00	2.20 - 2.20	2.80 - 2.80	3.00 - 3.00	1.00 - 1.00	1.50 - 1.50	1.00 - 1.00	2.00 - 2.00	2.90 - 2.90	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		16-Aug-2018			16-Aug-2018			16-Aug-2018		
Ammonium Low	21-Aug-2018	21-Aug-2018	21-Aug-2018		21-Aug-2018		21-Aug-2018	21-Aug-2018		21-Aug-2018
Ammonium Soil by Titration	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018
Anions by Kone (soil)		16-Aug-2018			16-Aug-2018			16-Aug-2018		
Asbestos ID in Solid Samples		17-Aug-2018			17-Aug-2018			17-Aug-2018		
Asbestos Quantification - Full		20-Aug-2018								
CEN 10:1 Leachate (1 Stage)	15-Aug-2018	15-Aug-2018	15-Aug-2018		15-Aug-2018		15-Aug-2018	15-Aug-2018		16-Aug-2018
CEN Readings	19-Aug-2018	19-Aug-2018	19-Aug-2018		19-Aug-2018		19-Aug-2018	19-Aug-2018		19-Aug-2018
Cyanide Comp/Free/Total/Thiocyanate	22-Aug-2018	22-Aug-2018	22-Aug-2018	17-Aug-2018	22-Aug-2018	20-Aug-2018	22-Aug-2018	22-Aug-2018	20-Aug-2018	22-Aug-2018
Dissolved Metals by ICP-MS	22-Aug-2018	21-Aug-2018	21-Aug-2018		21-Aug-2018		22-Aug-2018	21-Aug-2018		21-Aug-2018
EPH CWG (Aliphatic) Aqueous GC (W)	20-Aug-2018	20-Aug-2018	20-Aug-2018		20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018
EPH CWG (Aliphatic) GC (S)	21-Aug-2018	20-Aug-2018	20-Aug-2018	21-Aug-2018	17-Aug-2018	17-Aug-2018	20-Aug-2018	20-Aug-2018	17-Aug-2018	20-Aug-2018
EPH CWG (Aromatic) Aqueous GC (W)	20-Aug-2018	20-Aug-2018	20-Aug-2018		20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018
EPH CWG (Aromatic) GC (S)	21-Aug-2018	20-Aug-2018	20-Aug-2018	21-Aug-2018	17-Aug-2018	17-Aug-2018	20-Aug-2018	20-Aug-2018	17-Aug-2018	20-Aug-2018
GRO by GC-FID (S)	21-Aug-2018	21-Aug-2018	21-Aug-2018	19-Aug-2018	21-Aug-2018	19-Aug-2018	21-Aug-2018	21-Aug-2018	19-Aug-2018	21-Aug-2018
GRO by GC-FID (W)	20-Aug-2018	20-Aug-2018	20-Aug-2018		20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018
Mercury Dissolved	20-Aug-2018	20-Aug-2018	21-Aug-2018		21-Aug-2018		21-Aug-2018	21-Aug-2018		20-Aug-2018
Metals in solid samples by OES	21-Aug-2018	17-Aug-2018	21-Aug-2018	21-Aug-2018	17-Aug-2018	21-Aug-2018	21-Aug-2018	16-Aug-2018	17-Aug-2018	21-Aug-2018
PAH by GCMS	17-Aug-2018	20-Aug-2018	20-Aug-2018	17-Aug-2018	20-Aug-2018	20-Aug-2018	21-Aug-2018	21-Aug-2018	20-Aug-2018	21-Aug-2018
PAH Spec MS - Aqueous (W)	20-Aug-2018	20-Aug-2018	20-Aug-2018		20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018
pH	16-Aug-2018	15-Aug-2018	16-Aug-2018	16-Aug-2018	15-Aug-2018	16-Aug-2018	16-Aug-2018	17-Aug-2018	16-Aug-2018	16-Aug-2018
pH Value of Filtered Water	20-Aug-2018	20-Aug-2018	20-Aug-2018		20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018
Phenols by HPLC (S)	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	17-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018
Sample description	14-Aug-2018	15-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018
Total Organic Carbon	20-Aug-2018	16-Aug-2018	20-Aug-2018	16-Aug-2018	16-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	17-Aug-2018	20-Aug-2018
Total Sulphate		17-Aug-2018			17-Aug-2018			17-Aug-2018		
Total Sulphur		17-Aug-2018			17-Aug-2018			17-Aug-2018		
TPH CWG (W)	20-Aug-2018	20-Aug-2018	20-Aug-2018		20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018
TPH CWG GC (S)	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	19-Aug-2018	21-Aug-2018	21-Aug-2018	19-Aug-2018	21-Aug-2018
VOC MS (S)	18-Aug-2018	18-Aug-2018	18-Aug-2018	18-Aug-2018	18-Aug-2018	18-Aug-2018	18-Aug-2018	18-Aug-2018	18-Aug-2018	18-Aug-2018

Lab Sample No(s)	18112687	18112693	18112697	18112701	18112710	18112715	18112721	18112733	18112759	18112771
Customer Sample Ref.	3CE2	3CE2-V	3CF2	3CF2	3CF2-V	3CG2	3CG2	3CG2-V	3CH6	3CH6-V
AGS Ref.										
Depth	1.00 - 1.00	1.60 - 1.60	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	0.90 - 0.90	1.10 - 1.10	0.50 - 0.50	0.80 - 0.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	16-Aug-2018			16-Aug-2018			16-Aug-2018		22-Aug-2018	
Ammonium Low	21-Aug-2018		21-Aug-2018	21-Aug-2018		21-Aug-2018	21-Aug-2018		21-Aug-2018	
Ammonium Soil by Titration	16-Aug-2018	15-Aug-2018	15-Aug-2018	16-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018
Anions by Kone (soil)	16-Aug-2018			16-Aug-2018			16-Aug-2018		16-Aug-2018	
Asbestos ID in Solid Samples	17-Aug-2018			17-Aug-2018			17-Aug-2018		17-Aug-2018	
CEN 10:1 Leachate (1 Stage)	16-Aug-2018		16-Aug-2018	15-Aug-2018		16-Aug-2018	16-Aug-2018		15-Aug-2018	
CEN Readings	19-Aug-2018		19-Aug-2018	19-Aug-2018		19-Aug-2018	19-Aug-2018		19-Aug-2018	
Cyanide Comp/Free/Total/Thiocyanate	22-Aug-2018	20-Aug-2018	22-Aug-2018	22-Aug-2018	20-Aug-2018	22-Aug-2018	22-Aug-2018	20-Aug-2018	22-Aug-2018	17-Aug-2018
Dissolved Metals by ICP-MS	22-Aug-2018		21-Aug-2018	21-Aug-2018		22-Aug-2018	22-Aug-2018		21-Aug-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018	
EPH CWG (Aliphatic) GC (S)	17-Aug-2018	20-Aug-2018	17-Aug-2018	21-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018
EPH CWG (Aromatic) Aqueous GC (W)	20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018	
EPH CWG (Aromatic) GC (S)	17-Aug-2018	20-Aug-2018	17-Aug-2018	21-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018
GRO by GC-FID (S)	18-Aug-2018	18-Aug-2018	21-Aug-2018	21-Aug-2018	19-Aug-2018	21-Aug-2018	21-Aug-2018	18-Aug-2018	21-Aug-2018	19-Aug-2018
GRO by GC-FID (W)	20-Aug-2018		20-Aug-2018	19-Aug-2018		18-Aug-2018	20-Aug-2018		20-Aug-2018	
Mercury Dissolved	20-Aug-2018		20-Aug-2018	21-Aug-2018		21-Aug-2018	21-Aug-2018		20-Aug-2018	
Metals in solid samples by OES	17-Aug-2018	21-Aug-2018	21-Aug-2018	17-Aug-2018	21-Aug-2018	21-Aug-2018	17-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018
PAH by GCMS	21-Aug-2018	16-Aug-2018	20-Aug-2018	21-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018	16-Aug-2018	17-Aug-2018	17-Aug-2018
PAH Spec MS - Aqueous (W)	21-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018	
pH	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018
pH Value of Filtered Water	20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018	
Phenols by HPLC (S)	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	17-Aug-2018	16-Aug-2018	16-Aug-2018
Sample description	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018
Total Organic Carbon	16-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	20-Aug-2018	16-Aug-2018	20-Aug-2018
Total Sulphate	17-Aug-2018			17-Aug-2018			17-Aug-2018		17-Aug-2018	
Total Sulphur	17-Aug-2018			17-Aug-2018			17-Aug-2018		17-Aug-2018	
TPH CWG (W)	20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018	20-Aug-2018		20-Aug-2018	
TPH CWG GC (S)	18-Aug-2018	20-Aug-2018	21-Aug-2018	21-Aug-2018	19-Aug-2018	21-Aug-2018	21-Aug-2018	18-Aug-2018	21-Aug-2018	19-Aug-2018
VOC MS (S)	18-Aug-2018	18-Aug-2018	21-Aug-2018	18-Aug-2018	18-Aug-2018	20-Aug-2018	18-Aug-2018	18-Aug-2018	18-Aug-2018	18-Aug-2018

Preliminary

PRELIMINARY/INTERIM REPORT

SDG:	180814-70	**Client Reference:**		**Report Number:**	469236
Location:	Llanwern	**Order Number:**	LLA472	**Superseded Report:**	

Lab Sample No(s)	18112747	18112751	18112755	18112763	18112652	18112666	18112726	18112738	18112705	18112743
Customer Sample Ref.	3CJ5	3CJ5	3CJ5	3CJ5	3CJ6	3CJ6	3CJ6	3CJ6	3CJ5-V	3CJ6-V
AGS Ref.										
Depth	0.50 - 0.50	1.20 - 1.20	1.90 - 1.90	2.20 - 2.20	0.30 - 0.30	0.60 - 0.60	1.10 - 1.10	2.00 - 2.00	2.30 - 2.30	2.30 - 2.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	16-Aug-2018		16-Aug-2018		17-Aug-2018		16-Aug-2018			
Ammonium Low	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018		
Ammonium Soil by Titration	15-Aug-2018	15-Aug-2018	16-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018	16-Aug-2018	15-Aug-2018	15-Aug-2018	15-Aug-2018
Anions by Kone (soil)	16-Aug-2018		16-Aug-2018		16-Aug-2018		16-Aug-2018			
Asbestos ID in Solid Samples	17-Aug-2018		17-Aug-2018		17-Aug-2018		17-Aug-2018			
CEN 10:1 Leachate (1 Stage)	16-Aug-2018	16-Aug-2018	15-Aug-2018	15-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018		
CEN Readings	19-Aug-2018	19-Aug-2018	19-Aug-2018	19-Aug-2018	19-Aug-2018	19-Aug-2018	19-Aug-2018	19-Aug-2018		
Cyanide Comp/Free/Total/Thiocyanate	22-Aug-2018	22-Aug-2018	22-Aug-2018	22-Aug-2018	22-Aug-2018	22-Aug-2018	22-Aug-2018	22-Aug-2018	20-Aug-2018	17-Aug-2018
Dissolved Metals by ICP-MS	21-Aug-2018	22-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	22-Aug-2018	21-Aug-2018	21-Aug-2018		
EPH CWG (Aliphatic) Aqueous GC (W)	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018		
EPH CWG (Aliphatic) GC (S)	20-Aug-2018	17-Aug-2018	17-Aug-2018	20-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018
EPH CWG (Aromatic) Aqueous GC (W)	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018		
EPH CWG (Aromatic) GC (S)	20-Aug-2018	17-Aug-2018	17-Aug-2018	20-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018
GRO by GC-FID (S)	18-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	18-Aug-2018	18-Aug-2018
GRO by GC-FID (W)	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	18-Aug-2018	20-Aug-2018	20-Aug-2018		
Mercury Dissolved	20-Aug-2018	20-Aug-2018	21-Aug-2018	20-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	20-Aug-2018		
Metals in solid samples by OES	20-Aug-2018	20-Aug-2018	17-Aug-2018	21-Aug-2018	20-Aug-2018	21-Aug-2018	20-Aug-2018	17-Aug-2018	17-Aug-2018	21-Aug-2018
PAH by GCMS	21-Aug-2018	16-Aug-2018	21-Aug-2018	20-Aug-2018	20-Aug-2018	16-Aug-2018	20-Aug-2018	21-Aug-2018	16-Aug-2018	20-Aug-2018
PAH Spec MS - Aqueous (W)	20-Aug-2018	20-Aug-2018	21-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	21-Aug-2018	21-Aug-2018		
pH	16-Aug-2018	16-Aug-2018	15-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	15-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018
pH Value of Filtered Water	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018		
Phenols by HPLC (S)	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	16-Aug-2018	17-Aug-2018	16-Aug-2018	16-Aug-2018
Sample description	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018	14-Aug-2018
Semi Volatile Organic Compounds	17-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018	17-Aug-2018		
Total Organic Carbon	17-Aug-2018	17-Aug-2018	20-Aug-2018	20-Aug-2018	17-Aug-2018	20-Aug-2018	20-Aug-2018	16-Aug-2018	16-Aug-2018	20-Aug-2018
Total Sulphate	17-Aug-2018		17-Aug-2018		17-Aug-2018		17-Aug-2018			
Total Sulphur	17-Aug-2018		17-Aug-2018		21-Aug-2018		17-Aug-2018			
TPH CWG (W)	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018	20-Aug-2018		
TPH CWG GC (S)	20-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	21-Aug-2018	20-Aug-2018	20-Aug-2018
VOC MS (S)	18-Aug-2018	18-Aug-2018	21-Aug-2018	21-Aug-2018	18-Aug-2018	20-Aug-2018	21-Aug-2018	21-Aug-2018	18-Aug-2018	18-Aug-2018

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	03 October 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	180912-69
Your Reference:	
Location:	Llanwern
Report No:	475212

This report has been revised and directly supersedes 473916 in its entirety.

We received 16 samples on Wednesday September 12, 2018 and 16 of these samples were scheduled for analysis which was completed on Sunday November 18, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18308920	W153-01		0.00 - 0.00	11/09/2018
18309001	W153-02		0.00 - 0.00	11/09/2018
18308926	W153-03		0.00 - 0.00	11/09/2018
18308933	W153-04		0.00 - 0.00	11/09/2018
18308938	W153-05		0.00 - 0.00	11/09/2018
18308944	W153-06		0.00 - 0.00	11/09/2018
18308950	W153-07		0.00 - 0.00	11/09/2018
18308956	W153-08		0.00 - 0.00	11/09/2018
18308963	W153-09		0.00 - 0.00	11/09/2018
18308967	W153-10		0.00 - 0.00	11/09/2018
18308972	W153-11		0.00 - 0.00	11/09/2018
18308977	W153-12		0.00 - 0.00	11/09/2018
18308982	W153-13		0.00 - 0.00	11/09/2018
18308987	W153-14		0.00 - 0.00	11/09/2018
18308993	W153-15		0.00 - 0.00	11/09/2018
18308997	W153-16		0.00 - 0.00	11/09/2018

Maximum Sample/Coolbox Temperature (°C) : **12**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																			
			Customer Sample Reference																			
			AGS Reference																			
			Depth (m)																			
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
			Lab Sample No(s)	18308920			18309001			18308926			18308933			18308938			18308944			18308950
			Customer Sample Reference	W153-01			W153-02			W153-03			W153-04			W153-05			W153-06			W153-07
			AGS Reference																			
			Depth (m)	0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 8		X				X									X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 16	X			X			X			X			X			X				X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 16		X			X			X			X			X			X			
Anions by Kone (soil)	All	NDPs: 0 Tests: 8		X						X						X						
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 8	X						X						X							X
Calorific Value (S)*	All	NDPs: 0 Tests: 8		X			X			X			X			X			X			
CEN Readings	All	NDPs: 0 Tests: 16	X			X			X			X			X			X				X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 32	X	X		X	X		X	X		X	X		X	X		X	X			X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 16	X			X			X			X			X			X				X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 16	X			X			X			X			X			X				X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 16		X			X			X			X			X			X			
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 16	X			X			X			X			X			X				X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 16		X			X			X			X			X			X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 16			X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 16	X			X			X			X			X			X				X

18308987	W153-14		0.00 - 0.00	1kg TUB	S			x						x		x		x			x				x
18308982	W153-13		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x					x					x				
				1kg TUB	S			x				x			x		x		x			x				x
18308977	W153-12		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x						x					x					
				1kg TUB	S			x							x		x		x			x				x
18308972	W153-11		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x					x					x				
				1kg TUB	S			x				x			x		x		x			x				x
18308967	W153-10		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x						x					x					
				1kg TUB	S			x							x		x		x			x				x
18308963	W153-09		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x					x					x				
				1kg TUB	S			x				x			x		x		x			x				x
18308956	W153-08		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S					x				x		x					x					
				1kg TUB	S			x							x		x		x			x				x
18308950	W153-07		0.00 - 0.00	60g VOC (ALE215)	S																			x	
				250g Amber Jar (ALE210)	S		x			x		x					x					x				

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | | |

18308987	W153-14		0.00 - 0.00	1kg TUB	S	x				x		x								x		
18308982	W153-13		0.00 - 0.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x				x		x								x		
18308977	W153-12		0.00 - 0.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x						x		
				1kg TUB	S	x				x		x								x		
18308972	W153-11		0.00 - 0.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x				x		x								x		
18308967	W153-10		0.00 - 0.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x						x		
				1kg TUB	S	x				x		x								x		
18308963	W153-09		0.00 - 0.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x			x		
				1kg TUB	S	x				x		x								x		
18308956	W153-08		0.00 - 0.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x						x		
				1kg TUB	S	x				x		x								x		
18308950	W153-07		0.00 - 0.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x			x		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18308987		18308993			18308997			
Customer Sample Reference			W153-14		W153-15			W153-16			
AGS Reference											
Depth (m)			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00			
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	
Sample Type			S	S	S	S	S	S	S	S	
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 8				X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 16			X			X			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 16	X			X			X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 8				X					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 8			X						
CEN Readings	All	NDPs: 0 Tests: 16			X			X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 32	X		X	X		X	X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 16			X			X			
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 16			X			X			
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 16	X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 16			X			X			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 16	X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 16		X			X			X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 16			X			X			
Mercury Dissolved	All	NDPs: 0 Tests: 16			X			X			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18308987		18308993			18308997		
Customer Sample Reference			W153-14		W153-15			W153-16		
AGS Reference										
Depth (m)			0.00 - 0.00		0.00 - 0.00			0.00 - 0.00		
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 16	X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 16	X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 16			X			X		
pH	All	NDPs: 0 Tests: 16	X			X			X	
pH Value	All	NDPs: 0 Tests: 16			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 16	X			X			X	
Sample description	All	NDPs: 0 Tests: 16	X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 16	X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 8				X				
Total Sulphur	All	NDPs: 0 Tests: 8				X				
TPH CWG (W)	All	NDPs: 0 Tests: 16			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 16	X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 16		X			X			X

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18308920	W153-01	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
18309001	W153-02	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
18308926	W153-03	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
18308933	W153-04	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18308938	W153-05	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
18308944	W153-06	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18308950	W153-07	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
18308956	W153-08	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	None
18308963	W153-09	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
18308967	W153-10	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
18308972	W153-11	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
18308977	W153-12	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
18308982	W153-13	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
18308987	W153-14	0.00 - 0.00	Dark Brown	Loamy Sand	Stones	Vegetation
18308993	W153-15	0.00 - 0.00	Dark Brown	Loamy Sand	Vegetation	Stones
18308997	W153-16	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W153-01	W153-02	W153-03	W153-04	W153-05	W153-06
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018
			SDG Ref	180912-69	180912-69	180912-69	180912-69	180912-69	180912-69
			Lab Sample No.(s)	18308920	18309001	18308926	18308933	18308938	18308944
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.9	15	5.7	8.9	7.9	12
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		7.11	9.27	5.78	5.41	6.58	6.71
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		6.06	7.93	5.01	4.76	5.77	5.62
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		6.89	9.07	5.57	5.22	6.34	6.46
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		5.57	7.42	4.52	4.31	5.29	5.04
Water Analytical M (ad)	<0.5 %	SUB		1.01	0.87	1.89	1.89	1.31	1.45
Water Gross M(ex)	<0.5 %	SUB		13.6	13.8	11.6	10.4	11	14.9
Water Total M(ar)	<0.5 %	SUB		14.4	14.5	13.3	12.1	12.2	16.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0117 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.329		0.139		0.209	
Sulphate, Total potential	<0.06 %	TM132		0.987		0.417		0.627	
Soil Organic Matter (SOM)	<0.35 %	TM132		20.3 #	25.9 #	7.12 #	11.5 #	12.8 #	20.9 #
pH	1 pH Units	TM133		9.77 M	10.1 M	10.6 M	11.4 M	10.7 M	10.7 M
Cyanide, Total	<1 mg/kg	TM153		2.11 M	1.97 M	5 M	<1 M	<1 M	1.17 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.18 M	10.3 M	6.15 M	5.85 M	<6 M	6.19 M
Cadmium	<0.02 mg/kg	TM181		0.525 M	<0.02 M	<0.02 M	<0.02 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		69.1 M	180 M	176 M	176 M	547 M	280 M
Copper	<1.4 mg/kg	TM181		10.9 M	32.4 M	18.5 M	11.3 M	<14 M	15.7 M
Iron	<1000 mg/kg	TM181		29100 #	106000 #	69900 #	72100 #	187000 #	102000 #
Lead	<0.7 mg/kg	TM181		111 M	74.2 M	62.6 M	47.5 M	46.3 M	52.4 M
Manganese	<0.13 mg/kg	TM181		5840 M	11700 M	13800 M	11400 M	26200 M	20600 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		8.26 M	17.9 M	13.3 M	20.3 M	22.6 M	11.5 M
Selenium	<1 mg/kg	TM181		2.9 #	4.28 #	5.41 #	4.58 #	14.3 #	7.17 #
Vanadium	<0.2 mg/kg	TM181		84.3 #	200 #	197 #	195 #	432 #	264 #
Zinc	<1.9 mg/kg	TM181		466 M	360 M	301 M	209 M	206 M	245 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.223		0.243		0.217	
Calcium	<21 mg/kg	TM224		196000		178000		174000	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W153-01	W153-02	W153-03	W153-04	W153-05	W153-06
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018
			SDG Ref	180912-69	180912-69	180912-69	180912-69	180912-69	180912-69
			Lab Sample No.(s)	18308920	18309001	18308926	18308933	18308938	18308944
			AGS Reference						
Magnesium	<8 mg/kg	TM224		32300		19300		21300	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.181 M		0.137 M		0.0796 M	

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W153-07	W153-08	W153-09	W153-10	W153-11	W153-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018
			SDG Ref	180912-69	180912-69	180912-69	180912-69	180912-69	180912-69
			Lab Sample No.(s)	18308950	18308956	18308963	18308967	18308972	18308977
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.9	6.7	8.3	11	13	12
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB		5.89	6.56				
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB		5.12	5.72				
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB		5.69	6.33				
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB		5.69	5.22				
Water Analytical M (ad)	<0.5 %	SUB		1.2	1.03				
Water Gross M(ex)	<0.5 %	SUB		12.1	11.8				
Water Total M(ar)	<0.5 %	SUB		13.1	12.8				
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0109 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0109 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.367		0.281		0.286	
Sulphate, Total potential	<0.06 %	TM132		1.1		0.843		0.858	
Soil Organic Matter (SOM)	<0.35 %	TM132		31.5 #	6.41 #	41.4 #	14.1 #	26.4 #	15.7 #
pH	1 pH Units	TM133		10.9 M	10.7 M	9.93 M	10.3 M	10.6 M	11.2 M
Cyanide, Total	<1 mg/kg	TM153		1.81 M	1.1 M	1.36 M	1.55 M	1.98 M	1.62 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		5.13 M	4.12 M	4.57 M	5.5 M	9.5 M	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 M	0.249 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		412 M	190 M	82 M	243 M	147 M	837 M
Copper	<1.4 mg/kg	TM181		13.7 M	11.6 M	10.5 M	7.01 M	16.7 M	14.7 M
Iron	<1000 mg/kg	TM181		89000 #	61200 #	39900 #	93100 #	77200 #	134000 #
Lead	<0.7 mg/kg	TM181		34.8 M	27.8 M	54.2 M	43.8 M	148 M	58.3 M
Manganese	<0.13 mg/kg	TM181		27600 M	9320 M	3960 M	15900 M	9150 M	28200 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		10.6 M	7.29 M	9.92 M	8.88 M	14.7 M	11.7 M
Selenium	<1 mg/kg	TM181		8.27 #	4.42 #	2.71 #	6.19 #	4.14 #	18 #
Vanadium	<0.2 mg/kg	TM181		512 #	202 #	83.4 #	272 #	162 #	537 #
Zinc	<1.9 mg/kg	TM181		213 M	108 M	275 M	229 M	712 M	207 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.426		0.246		0.324	
Calcium	<21 mg/kg	TM224		188000		120000		133000	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W153-07	W153-08	W153-09	W153-10	W153-11	W153-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018
			SDG Ref	180912-69	180912-69	180912-69	180912-69	180912-69	180912-69
			Lab Sample No.(s)	18308950	18308956	18308963	18308967	18308972	18308977
			AGS Reference						
Magnesium	<8 mg/kg	TM224		17300		16200		17300	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.11 M		0.112 M		0.177 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W153-13	W153-14	W153-15	W153-16		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	11/09/2018	11/09/2018	11/09/2018	11/09/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	12/09/2018	12/09/2018	12/09/2018	12/09/2018		
			SDG Ref	180912-69	180912-69	180912-69	180912-69		
			Lab Sample No.(s)	18308982	18308987	18308993	18308997		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	8.6	11	13		
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M		
Sulphur, Total	<0.02 %	TM132		0.272		0.278			
Sulphate, Total potential	<0.06 %	TM132		0.816		0.834			
Soil Organic Matter (SOM)	<0.35 %	TM132		24 #	17.8 #	12.8 #	15.7 #		
pH	1 pH Units	TM133		10.6 M	11.1 M	10.9 M	11.1 M		
Cyanide, Total	<1 mg/kg	TM153		1.27 M	2.2 M	1.35 M	1.23 M		
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		<6 M	14.4 M	5.89 M	6.08 M		
Cadmium	<0.02 mg/kg	TM181		0.504 M	<0.2 M	<0.02 M	<0.02 M		
Chromium	<0.9 mg/kg	TM181		179 M	1200 M	271 M	114 M		
Copper	<1.4 mg/kg	TM181		23.5 M	47.4 M	10.2 M	14 M		
Iron	<1000 mg/kg	TM181		80000 #	153000 #	74200 #	84800 #		
Lead	<0.7 mg/kg	TM181		114 M	71.6 M	56.3 M	53.7 M		
Manganese	<0.13 mg/kg	TM181		8480 M	24200 M	13100 M	7740 M		
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		30.3 M	24.3 M	9.73 M	13.3 M		
Selenium	<1 mg/kg	TM181		<10 #	16 #	4.8 #	3.43 #		
Vanadium	<0.2 mg/kg	TM181		213 #	866 #	282 #	152 #		
Zinc	<1.9 mg/kg	TM181		356 M	242 M	229 M	261 M		
Sulphate, acid soluble (total)	<0.02 %	TM221		0.336		0.279			
Calcium	<21 mg/kg	TM224		123000		166000			
Magnesium	<8 mg/kg	TM224		19400		31400			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.211 M		0.133 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W153-01	W153-02	W153-03	W153-04	W153-05	W153-06
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018
			SDG Ref	180912-69	180912-69	180912-69	180912-69	180912-69	180912-69
			Lab Sample No.(s)	18308920	18309001	18308926	18308933	18308938	18308944
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.9	87.4	87.6	86.9	81.7	91.6
Acenaphthene-d10 % recovery**	%	TM218		80.5	83.4	84.9	89	77.8	84.6
Phenanthrene-d10 % recovery**	%	TM218		88.5	90	91.4	93.8	84.8	93.4
Chrysene-d12 % recovery**	%	TM218		81.6	88	84.4	87.3	79	87.5
Perylene-d12 % recovery**	%	TM218		88.2	89.1	87.9	90.4	80.9	90.6
Naphthalene	<0.009 mg/kg	TM218		3.83 M	4.39 M	5.17 M	22.2 M	4.42 M	2.95 M
Acenaphthylene	<0.012 mg/kg	TM218		2.45 M	6.16 M	1.73 M	4.61 M	1.22 M	1.33 M
Acenaphthene	<0.008 mg/kg	TM218		0.421 M	0.574 M	0.432 M	1.05 M	0.178 M	0.153 M
Fluorene	<0.01 mg/kg	TM218		1.6 M	7.63 M	1.54 M	12.2 M	1.06 M	1.35 M
Phenanthrene	<0.015 mg/kg	TM218		9.43 M	45.5 M	10 M	27.2 M	6.78 M	7.53 M
Anthracene	<0.016 mg/kg	TM218		3.74 M	20.6 M	4.31 M	8.72 M	2.13 M	3 M
Fluoranthene	<0.017 mg/kg	TM218		24 M	84.9 M	19 M	26 M	13.3 M	13.2 M
Pyrene	<0.015 mg/kg	TM218		18.3 M	58.9 M	15.4 M	21 M	10.1 M	9.85 M
Benz(a)anthracene	<0.014 mg/kg	TM218		12.7 M	33.5 M	9.27 M	14 M	6.04 M	5.98 M
Chrysene	<0.01 mg/kg	TM218		11.1 M	25.8 M	8.22 M	11.6 M	5.2 M	4.81 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		19.1 M	45.5 M	12.2 M	<0.015 M	8.61 M	8.86 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		6.4 M	15.1 M	4.01 M	<0.014 M	2.79 M	2.58 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		11.8 M	29.1 M	8.48 M	11.5 M	5.11 M	5.33 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		9.42 M	17 M	5.18 M	5.89 M	3.06 M	3.25 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		2.55 M	4.95 M	1.53 M	2.08 M	0.929 M	0.993 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		8.34 M	19.1 M	5.88 M	6.73 M	3.43 M	3.74 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		145	419	112	175	74.4	74.9

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W153-07	W153-08	W153-09	W153-10	W153-11	W153-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018
			SDG Ref	180912-69	180912-69	180912-69	180912-69	180912-69	180912-69
			Lab Sample No.(s)	18308950	18308956	18308963	18308967	18308972	18308977
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.4	88.7	83.2	85.2	18	86
Acenaphthene-d10 % recovery**	%	TM218		89.7	85.2	81.1	84.2	16.6	81.3
Phenanthrene-d10 % recovery**	%	TM218		94.9	89.5	86.2	89.4	18.4	87.9
Chrysene-d12 % recovery**	%	TM218		90.4	78.5	76.3	78.1	17.6	77.8
Perylene-d12 % recovery**	%	TM218		90.1	80.3	80.9	84.5	18.3	86
Naphthalene	<0.009 mg/kg	TM218		9.65 M	4.17 M	3.45 M	4.92 M	1.03 M	4.88 M
Acenaphthylene	<0.012 mg/kg	TM218		2.88 M	0.962 M	2.15 M	2.11 M	0.376 M	1.96 M
Acenaphthene	<0.008 mg/kg	TM218		0.393 M	0.192 M	0.39 M	0.384 M	0.11 M	0.263 M
Fluorene	<0.01 mg/kg	TM218		2.86 M	1.01 M	1.54 M	2.04 M	0.285 M	1.34 M
Phenanthrene	<0.015 mg/kg	TM218		15.8 M	6.31 M	8.57 M	10.5 M	2.29 M	9.41 M
Anthracene	<0.016 mg/kg	TM218		5.05 M	1.81 M	3.44 M	3.86 M	0.937 M	4.43 M
Fluoranthene	<0.017 mg/kg	TM218		32 M	9.9 M	20.5 M	20.7 M	4.95 M	22.1 M
Pyrene	<0.015 mg/kg	TM218		24.1 M	7.42 M	15.8 M	15.6 M	3.92 M	17 M
Benz(a)anthracene	<0.014 mg/kg	TM218		13.7 M	4.52 M	10.7 M	10 M	2.25 M	10.2 M
Chrysene	<0.01 mg/kg	TM218		11.5 M	4.57 M	10.4 M	9.86 M	1.93 M	9.65 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		21.3 M	6.41 M	15.4 M	15.5 M	2.99 M	14.2 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		7.69 M	2.21 M	6.03 M	5.28 M	0.971 M	4.95 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		12.6 M	4.2 M	10.2 M	9.41 M	1.91 M	9.05 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		7.67 M	3.26 M	7.82 M	7.3 M	1.11 M	6.93 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		2.33 M	0.846 M	1.97 M	1.79 M	0.326 M	1.68 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		8.74 M	2.83 M	7.14 M	6.24 M	1.28 M	6.13 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		178	60.6	125	125	26.7	124

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W153-13	W153-14	W153-15	W153-16		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	11/09/2018	11/09/2018	11/09/2018	11/09/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	12/09/2018	12/09/2018	12/09/2018	12/09/2018		
			SDG Ref	180912-69	180912-69	180912-69	180912-69		
			Lab Sample No.(s)	18308982	18308987	18308993	18308997		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.7	88.3	90.4	94		
Acenaphthene-d10 % recovery**	%	TM218		85.2	85.3	88.2	88.2		
Phenanthrene-d10 % recovery**	%	TM218		90.2	91.3	92	91.5		
Chrysene-d12 % recovery**	%	TM218		79.3	85.5	81.5	78		
Perylene-d12 % recovery**	%	TM218		83	85.4	86.5	77.8		
Naphthalene	<0.009 mg/kg	TM218		4.49 M	3.93 M	3.63 M	2.87 M		
Acenaphthylene	<0.012 mg/kg	TM218		1.16 M	2.74 M	1.23 M	0.928 M		
Acenaphthene	<0.008 mg/kg	TM218		0.181 M	0.39 M	0.209 M	0.143 M		
Fluorene	<0.01 mg/kg	TM218		0.959 M	3.15 M	1.12 M	0.721 M		
Phenanthrene	<0.015 mg/kg	TM218		6.08 M	21.9 M	7.4 M	4.77 M		
Anthracene	<0.016 mg/kg	TM218		1.82 M	8.3 M	2.24 M	1.47 M		
Fluoranthene	<0.017 mg/kg	TM218		10.9 M	40 M	13.3 M	9.03 M		
Pyrene	<0.015 mg/kg	TM218		8.43 M	28.2 M	10 M	7.07 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		4.92 M	14.2 M	5.99 M	4.27 M		
Chrysene	<0.01 mg/kg	TM218		4.78 M	10.7 M	5.63 M	4.19 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		7.28 M	13 M	8.63 M	6.63 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.38 M	5.35 M	2.62 M	2.14 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		4.53 M	11.8 M	5.46 M	3.96 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		3.49 M	6.69 M	4.1 M	2.92 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.799 M	2.07 M	0.983 M	0.787 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		3.06 M	7.63 M	3.7 M	2.79 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		65.3	180	76.2	54.7		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W153-01	W153-02	W153-03	W153-04	W153-05	W153-06
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018
			SDG Ref	180912-69	180912-69	180912-69	180912-69	180912-69	180912-69
			Lab Sample No.(s)	18308920	18309001	18308926	18308933	18308938	18308944
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		33	32	45	32	35	38
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.126 #	0.17 #	0.846 #	0.269 #	0.152 #	0.251 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	0.0552	<0.01	<0.01	0.0103
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0241	0.0351	0.213	0.0549	0.0304	0.0547
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0208	0.0257	0.124	0.0439	0.0239	0.0445
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0329	0.0433	0.208	0.0714	0.038	0.057
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.27	9.64	6.47	8.65	6.44	5.16
Aliphatics >C16-C21	<0.1 mg/kg	TM173		45.2	62.3	44.7	55.6	31.1	39.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		69.2	87.6	85	86.6	79.1	79.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		16.3	21	20.4	19.6	19.7	26.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		137	180	157	170	136	151
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	0.0106	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	0.0117	0.0127	0.0154	<0.01	0.0137
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0143	0.0176	0.0828	0.0296	0.0163	0.0296
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0219	0.0293	0.139	0.0472	0.025	0.0376
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		15.1	25.7	13.8	16	33.7	10.8
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		123	213	95.6	102	337	78.6
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		377	612	292	237	583	256
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		109	178	88.3	67.1	153	82.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		33.1	52.6	26.6	20.4	44.1	27.5
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		624	1030	489	422	1110	428
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		762	1210	647	593	1240	579

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W153-07	W153-08	W153-09	W153-10	W153-11	W153-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018
			SDG Ref	180912-69	180912-69	180912-69	180912-69	180912-69	180912-69
			Lab Sample No.(s)	18308950	18308956	18308963	18308967	18308972	18308977
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		49	26	34	35	30	58
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.697 #	0.326 #	0.175 #	0.3 #	0.184 #	0.475 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	0.0107	<0.01	<0.01	<0.01	0.0148
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0526	0.0622	0.0349	0.0426	0.0345	0.0901
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0483	0.0504	0.0305	0.0493	0.0253	0.0775
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.321	0.089	0.0436	0.0862	0.0541	0.132
Aliphatics >C12-C16	<0.1 mg/kg	TM173		8.08	7.19	8.74	7.69	6.56	4.85
Aliphatics >C16-C21	<0.1 mg/kg	TM173		46.6	47.8	55.5	45.2	38.6	44.9
Aliphatics >C21-C35	<0.1 mg/kg	TM173		93.6	79.3	80.8	75.8	85.4	71.2
Aliphatics >C35-C44	<0.1 mg/kg	TM173		28	18.5	22.7	19.7	21.9	18.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		176	153	168	148	153	140
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.0129	0.015	<0.01	0.0146	<0.01	0.0228
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0322	0.0332	0.0207	0.0336	0.0173	0.0513
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.214	0.059	0.0294	0.0571	0.0357	0.0878
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		29	16.5	16.9	19.5	13.6	7.56
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		238	98.7	136	125	101	54.3
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		554	279	478	345	302	170
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		161	77.8	155	98.6	97.4	52.7
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		49.7	25	53.2	32.8	29.9	18.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		982	472	786	589	514	284
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1160	625	953	737	667	424

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W153-13	W153-14	W153-15	W153-16		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	11/09/2018	11/09/2018	11/09/2018	11/09/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	12/09/2018	12/09/2018	12/09/2018	12/09/2018		
			SDG Ref	180912-69	180912-69	180912-69	180912-69		
			Lab Sample No.(s)	18308982	18308987	18308993	18308997		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		27	32	30	35		
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.213 #	0.189 #	0.306 #	0.492 #		
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0173		
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0449	0.0383	0.0486	0.153		
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0357	0.0274	0.0497	0.0863		
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0552	0.0504	0.0893	0.0989		
Aliphatics >C12-C16	<0.1 mg/kg	TM173		4.1	6.66	9.53	5.72		
Aliphatics >C16-C21	<0.1 mg/kg	TM173		31.7	32.4	51.8	36.8		
Aliphatics >C21-C35	<0.1 mg/kg	TM173		78.8	63.2	91.5	85.6		
Aliphatics >C35-C44	<0.1 mg/kg	TM173		28.8	17.8	21.1	24.9		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		143	120	174	153		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	0.011	0.0147	0.0138		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.023	0.0186	0.0328	0.0575		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0368	0.0339	0.0588	0.0656		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		27.1	8.05	14.7	12.1		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		151	66.8	90	76.4		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		308	198	247	212		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		93.2	61.4	74.3	66.1		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		32.9	19.7	25.3	22.9		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		578	334	426	367		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		722	454	600	520		

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W153-01	W153-02	W153-03	W153-04	W153-05	W153-06
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018
			SDG Ref	180912-69	180912-69	180912-69	180912-69	180912-69	180912-69
			Lab Sample No.(s)	18308920	18309001	18308926	18308933	18308938	18308944
			AGS Reference						
Dibromofluoromethane**	%	TM116		94.3	91.6	92.4	92.1	98.8	86.4
Toluene-d8**	%	TM116		93.4	92.7	93.9	94.3	96.1	91.4
4-Bromofluorobenzene**	%	TM116		77.5	71.7	76.1	75.8	83.4	71.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.01 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.009 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.007 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.004 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.01 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.01 M
Naphthalene	<0.013 mg/kg	TM116		0.754 M	0.817 M	0.723 M	1.45 M	0.597 M	0.0686 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.04

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W153-07	W153-08	W153-09	W153-10	W153-11	W153-12
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018	11/09/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018	12/09/2018
			SDG Ref	180912-69	180912-69	180912-69	180912-69	180912-69	180912-69
			Lab Sample No.(s)	18308950	18308956	18308963	18308967	18308972	18308977
			AGS Reference						
Dibromofluoromethane**	%	TM116		93.4	90.3	94.5	86.8	89.6	99.1
Toluene-d8**	%	TM116		93	93.2	96.2	91.9	95	95.9
4-Bromofluorobenzene**	%	TM116		75.7	77	79.5	71.3	75.6	81.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		5.7 M	1.73 M	0.892 M	1.29 M	1.25 M	0.812 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W153-13	W153-14	W153-15	W153-16		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	11/09/2018	11/09/2018	11/09/2018	11/09/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	12/09/2018	12/09/2018	12/09/2018	12/09/2018		
			SDG Ref	180912-69	180912-69	180912-69	180912-69		
			Lab Sample No.(s)	18308982	18308987	18308993	18308997		
			AGS Reference						
Dibromofluoromethane**	%	TM116		91.9	95.9	91.1	91.1		
Toluene-d8**	%	TM116		92	94.8	92.9	88		
4-Bromofluorobenzene**	%	TM116		75.8	78.4	77.3	72		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.01 M		
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.009 M		
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.007 M		
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.004 M		
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.01 #		
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.01 M		
Naphthalene	<0.013 mg/kg	TM116		1.63 M	0.73 M	1.34 M	0.0797 M		
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.04		

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W153-01 0.00 - 0.00 SOLID 11/09/2018 00:00:00 14/09/2018 21:11:19 180912-69 18308920 TM048	18/09/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W153-03 0.00 - 0.00 SOLID 11/09/2018 00:00:00 14/09/2018 21:06:46 180912-69 18308926 TM048	18/09/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W153-05 0.00 - 0.00 SOLID 11/09/2018 00:00:00 13/09/2018 13:34:03 180912-69 18308938 TM048	19/09/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W153-07 0.00 - 0.00 SOLID 11/09/2018 00:00:00 13/09/2018 13:32:04 180912-69 18308950 TM048	19/09/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W153-09 0.00 - 0.00 SOLID 11/09/2018 00:00:00 13/09/2018 15:19:00 180912-69 18308963 TM048	18/09/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W153-11 0.00 - 0.00 SOLID 11/09/2018 00:00:00 13/09/2018 15:22:40 180912-69 18308972 TM048	19/09/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W153-13 0.00 - 0.00 SOLID 11/09/2018 00:00:00 13/09/2018 15:24:02 180912-69 18308982 TM048	19/09/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W153-15 0.00 - 0.00 SOLID 11/09/2018 00:00:00 13/09/2018 15:21:56 180912-69 18308993 TM048	19/09/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308920
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.075	<0.05	0.75	<0.5	-	-	-
Arsenic	0.00775	<0.0005	0.0775	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00144	<0.001	0.0144	<0.01	-	-	-
Copper	0.00555	<0.0003	0.0555	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00116	<0.0004	0.0116	<0.004	-	-	-
Selenium	0.00666	<0.001	0.0666	<0.01	-	-	-
Vanadium	0.123	<0.001	1.23	<0.01	-	-	-
Zinc	0.00286	<0.001	0.0286	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.451	<0.019	4.51	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000179	<0.00001	0.00179	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000595	<0.000005	0.000595	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000118	<0.000005	0.00118	<0.00005	-	-	-
Fluoranthene by GCMS	0.000913	<0.000005	0.00913	<0.00005	-	-	-
Anthracene by GCMS	0.000158	<0.000005	0.00158	<0.00005	-	-	-
Phenanthrene by GCMS	0.000436	<0.000005	0.00436	<0.00005	-	-	-
Fluorene by GCMS	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Chrysene by GCMS	0.000354	<0.000005	0.00354	<0.00005	-	-	-
Pyrene by GCMS	0.00088	<0.000005	0.0088	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000294	<0.000005	0.00294	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000447	<0.000005	0.00447	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000195	<0.000005	0.00195	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000257	<0.000002	0.00257	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000057	<0.000005	0.00057	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000269	<0.000005	0.00269	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000186	<0.000005	0.00186	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00492	<0.000082	0.0492	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Sep-2018
pH (pH Units)	9.96
Conductivity (µS/cm)	202.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308920
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Sep-2018
pH (pH Units)	9.96
Conductivity (µS/cm)	202.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308926
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00268	<0.0005	0.0268	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00319	<0.001	0.0319	<0.01	-	-	-
Copper	0.00871	<0.0003	0.0871	<0.003	-	-	-
Lead	0.00147	<0.0002	0.0147	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00216	<0.0004	0.0216	<0.004	-	-	-
Selenium	0.00261	<0.001	0.0261	<0.01	-	-	-
Vanadium	0.0917	<0.001	0.917	<0.01	-	-	-
Zinc	0.0104	<0.001	0.104	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.224	<0.019	2.24	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000149	<0.00001	0.00149	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000383	<0.000005	0.000383	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000607	<0.000005	0.000607	<0.00005	-	-	-
Fluoranthene by GCMS	0.000328	<0.000005	0.00328	<0.00005	-	-	-
Anthracene by GCMS	0.000071	<0.000005	0.00071	<0.00005	-	-	-
Phenanthrene by GCMS	0.000258	<0.000005	0.00258	<0.00005	-	-	-
Fluorene by GCMS	0.000072	<0.000005	0.00072	<0.00005	-	-	-
Chrysene by GCMS	0.0000469	<0.000005	0.000469	<0.00005	-	-	-
Pyrene by GCMS	0.000364	<0.000005	0.00364	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000347	<0.000005	0.000347	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000567	<0.000005	0.000567	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000292	<0.000005	0.000292	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000324	<0.000002	0.000324	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000261	<0.000005	0.000261	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00159	<0.000082	0.0159	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Sep-2018
pH (pH Units)	10.98
Conductivity (µS/cm)	301.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308926
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Sep-2018
pH (pH Units)	10.98
Conductivity (µS/cm)	301.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308933
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00235	<0.0005	0.0235	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00326	<0.001	0.0326	<0.01	-	-	-
Copper	0.00931	<0.0003	0.0931	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00237	<0.0004	0.0237	<0.004	-	-	-
Selenium	0.00231	<0.001	0.0231	<0.01	-	-	-
Vanadium	0.098	<0.001	0.98	<0.01	-	-	-
Zinc	0.00136	<0.001	0.0136	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000209	<0.00001	0.00209	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000376	<0.000005	0.000376	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000716	<0.000005	0.000716	<0.00005	-	-	-
Fluoranthene by GCMS	0.000384	<0.000005	0.00384	<0.00005	-	-	-
Anthracene by GCMS	0.0000779	<0.000005	0.000779	<0.00005	-	-	-
Phenanthrene by GCMS	0.000261	<0.000005	0.00261	<0.00005	-	-	-
Fluorene by GCMS	0.0000652	<0.000005	0.000652	<0.00005	-	-	-
Chrysene by GCMS	0.0000352	<0.000005	0.000352	<0.00005	-	-	-
Pyrene by GCMS	0.000389	<0.000005	0.00389	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000401	<0.000005	0.000401	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000456	<0.000005	0.000456	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000216	<0.000005	0.000216	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000023	<0.000002	0.00023	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0017	<0.000082	0.017	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Sep-2018
pH (pH Units)	10.80
Conductivity (µS/cm)	335.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308933
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Sep-2018
pH (pH Units)	10.80
Conductivity (µS/cm)	335.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308938
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-05
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000106	<0.00001	0.000106	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00235	<0.0005	0.0235	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.003	<0.001	0.03	<0.01	-	-	-
Copper	0.00732	<0.0003	0.0732	<0.003	-	-	-
Lead	0.00159	<0.0002	0.0159	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0017	<0.0004	0.017	<0.004	-	-	-
Selenium	0.00229	<0.001	0.0229	<0.01	-	-	-
Vanadium	0.121	<0.001	1.21	<0.01	-	-	-
Zinc	0.00135	<0.001	0.0135	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000108	<0.00001	0.00108	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000368	<0.000005	0.000368	<0.00005	-	-	-
Fluoranthene by GCMS	0.000204	<0.000005	0.00204	<0.00005	-	-	-
Anthracene by GCMS	0.0000252	<0.000005	0.000252	<0.00005	-	-	-
Phenanthrene by GCMS	0.000129	<0.000005	0.00129	<0.00005	-	-	-
Fluorene by GCMS	0.0000286	<0.000005	0.000286	<0.00005	-	-	-
Chrysene by GCMS	0.0000241	<0.000005	0.000241	<0.00005	-	-	-
Pyrene by GCMS	0.000194	<0.000005	0.00194	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000233	<0.000005	0.000233	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000349	<0.000005	0.000349	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000186	<0.000002	0.000186	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000961	<0.000005	0.0000961	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000134	<0.000005	0.000134	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000877	<0.000082	0.00877	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.80
Conductivity (µS/cm)	304.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308938
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-05
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.80
Conductivity (µS/cm)	304.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308944
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-06
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000101	<0.00001	0.000101	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00193	<0.0005	0.0193	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00298	<0.001	0.0298	<0.01	-	-	-
Copper	0.00637	<0.0003	0.0637	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00153	<0.0004	0.0153	<0.004	-	-	-
Selenium	0.00221	<0.001	0.0221	<0.01	-	-	-
Vanadium	0.0947	<0.001	0.947	<0.01	-	-	-
Zinc	0.00141	<0.001	0.0141	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000107	<0.00001	0.00107	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000433	<0.000005	0.000433	<0.00005	-	-	-
Fluoranthene by GCMS	0.000115	<0.000005	0.00115	<0.00005	-	-	-
Anthracene by GCMS	0.00002	<0.000005	0.0002	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000883	<0.000005	0.000883	<0.00005	-	-	-
Fluorene by GCMS	0.0000256	<0.000005	0.000256	<0.00005	-	-	-
Chrysene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Pyrene by GCMS	0.000125	<0.000005	0.00125	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000156	<0.000005	0.000156	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000195	<0.000005	0.000195	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000128	<0.000002	0.000128	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000552	<0.000005	0.0000552	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000619	<0.000082	0.00619	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	11.02
Conductivity (µS/cm)	350.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308944
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-06
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	11.02
Conductivity (µS/cm)	350.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308950
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-07
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0028	<0.0005	0.028	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00148	<0.001	0.0148	<0.01	-	-	-
Copper	0.00972	<0.0003	0.0972	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00231	<0.0004	0.0231	<0.004	-	-	-
Selenium	0.00282	<0.001	0.0282	<0.01	-	-	-
Vanadium	0.122	<0.001	1.22	<0.01	-	-	-
Zinc	0.00142	<0.001	0.0142	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.251	<0.019	2.51	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000856	<0.00001	0.000856	<0.0001	-	-	-
Acenaphthene by GCMS	0.000123	<0.000005	0.00123	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000475	<0.000005	0.00475	<0.00005	-	-	-
Fluoranthene by GCMS	0.00137	<0.000005	0.0137	<0.00005	-	-	-
Anthracene by GCMS	0.000315	<0.000005	0.00315	<0.00005	-	-	-
Phenanthrene by GCMS	0.0011	<0.000005	0.011	<0.00005	-	-	-
Fluorene by GCMS	0.000461	<0.000005	0.00461	<0.00005	-	-	-
Chrysene by GCMS	0.00016	<0.000005	0.0016	<0.00005	-	-	-
Pyrene by GCMS	0.00123	<0.000005	0.0123	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000156	<0.000005	0.00156	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000181	<0.000005	0.00181	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000873	<0.000005	0.000873	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000105	<0.000002	0.00105	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000245	<0.000005	0.000245	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000845	<0.000005	0.000845	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000823	<0.000005	0.000823	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00605	<0.000082	0.0605	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.99
Conductivity (µS/cm)	290.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308950
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-07
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.02	<0.01	0.2	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	0.02	<0.01	0.2	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.013	<0.01	0.13	<0.1	-	-	-
Aromatics >EC16-EC21	0.023	<0.01	0.23	<0.1	-	-	-
Aromatics >EC21-EC35	0.01	<0.01	0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.046	<0.01	0.46	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.068	<0.01	0.68	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.02	<0.01	0.2	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.99
Conductivity (µS/cm)	290.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308956
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-08
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00249	<0.0005	0.0249	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00253	<0.001	0.0253	<0.01	-	-	-
Copper	0.00497	<0.0003	0.0497	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00208	<0.0004	0.0208	<0.004	-	-	-
Selenium	0.00278	<0.001	0.0278	<0.01	-	-	-
Vanadium	0.0909	<0.001	0.909	<0.01	-	-	-
Zinc	0.0401	<0.001	0.401	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000803	<0.00001	0.000803	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000652	<0.000005	0.000652	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Fluoranthene by GCMS	0.000496	<0.000005	0.00496	<0.00005	-	-	-
Anthracene by GCMS	0.0000774	<0.000005	0.000774	<0.00005	-	-	-
Phenanthrene by GCMS	0.000294	<0.000005	0.00294	<0.00005	-	-	-
Fluorene by GCMS	0.000099	<0.000005	0.00099	<0.00005	-	-	-
Chrysene by GCMS	0.0000313	<0.000005	0.000313	<0.00005	-	-	-
Pyrene by GCMS	0.000414	<0.000005	0.00414	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000302	<0.000005	0.000302	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000329	<0.000005	0.000329	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000166	<0.000002	0.000166	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00179	<0.000082	0.0179	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Sep-2018
pH (pH Units)	10.91
Conductivity (µS/cm)	314.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308956
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-08
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Sep-2018
pH (pH Units)	10.91
Conductivity (µS/cm)	314.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308963
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-09
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.07	<0.05	0.7	<0.5	-	-	-
Arsenic	0.00668	<0.0005	0.0668	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00124	<0.001	0.0124	<0.01	-	-	-
Copper	0.0059	<0.0003	0.059	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00128	<0.0004	0.0128	<0.004	-	-	-
Selenium	0.00558	<0.001	0.0558	<0.01	-	-	-
Vanadium	0.124	<0.001	1.24	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.432	<0.019	4.32	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000334	<0.00001	0.00334	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000904	<0.000005	0.000904	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000267	<0.000005	0.00267	<0.00005	-	-	-
Fluoranthene by GCMS	0.0015	<0.000005	0.015	<0.00005	-	-	-
Anthracene by GCMS	0.000251	<0.000005	0.00251	<0.00005	-	-	-
Phenanthrene by GCMS	0.00069	<0.000005	0.0069	<0.00005	-	-	-
Fluorene by GCMS	0.00022	<0.000005	0.0022	<0.00005	-	-	-
Chrysene by GCMS	0.000589	<0.000005	0.00589	<0.00005	-	-	-
Pyrene by GCMS	0.0014	<0.000005	0.014	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000538	<0.000005	0.00538	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000833	<0.000005	0.00833	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000307	<0.000005	0.00307	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000509	<0.000002	0.00509	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000405	<0.000005	0.00405	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000339	<0.000005	0.00339	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00838	<0.000082	0.0838	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	9.67
Conductivity (µS/cm)	212.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308963
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-09
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	9.67
Conductivity (µS/cm)	212.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

03/10/2018 17:11:30

17:10:47 03/10/2018

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308967
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-10
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00517	<0.0005	0.0517	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00165	<0.001	0.0165	<0.01	-	-	-
Copper	0.0067	<0.0003	0.067	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00301	<0.003	0.0301	<0.03	-	-	-
Nickel	0.00147	<0.0004	0.0147	<0.004	-	-	-
Selenium	0.00415	<0.001	0.0415	<0.01	-	-	-
Vanadium	0.118	<0.001	1.18	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.278	<0.019	2.78	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000276	<0.00001	0.00276	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000728	<0.000005	0.000728	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000178	<0.000005	0.00178	<0.00005	-	-	-
Fluoranthene by GCMS	0.00108	<0.000005	0.0108	<0.00005	-	-	-
Anthracene by GCMS	0.000186	<0.000005	0.00186	<0.00005	-	-	-
Phenanthrene by GCMS	0.00055	<0.000005	0.0055	<0.00005	-	-	-
Fluorene by GCMS	0.000174	<0.000005	0.00174	<0.00005	-	-	-
Chrysene by GCMS	0.000404	<0.000005	0.00404	<0.00005	-	-	-
Pyrene by GCMS	0.00102	<0.000005	0.0102	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000368	<0.000005	0.00368	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000537	<0.000005	0.00537	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000206	<0.000005	0.00206	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00033	<0.000002	0.0033	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000676	<0.000005	0.000676	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000247	<0.000005	0.00247	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000246	<0.000005	0.00246	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00594	<0.000082	0.0594	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.28
Conductivity (µS/cm)	223.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308967
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-10
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.28
Conductivity (µS/cm)	223.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308972
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-11
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00468	<0.0005	0.0468	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00448	<0.001	0.0448	<0.01	-	-	-
Copper	0.0085	<0.0003	0.085	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00191	<0.0004	0.0191	<0.004	-	-	-
Selenium	0.00404	<0.001	0.0404	<0.01	-	-	-
Vanadium	0.131	<0.001	1.31	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.324	<0.019	3.24	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000222	<0.00001	0.00222	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000364	<0.000005	0.000364	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Fluoranthene by GCMS	0.000661	<0.000005	0.00661	<0.00005	-	-	-
Anthracene by GCMS	0.000113	<0.000005	0.00113	<0.00005	-	-	-
Phenanthrene by GCMS	0.000347	<0.000005	0.00347	<0.00005	-	-	-
Fluorene by GCMS	0.0000798	<0.000005	0.000798	<0.00005	-	-	-
Chrysene by GCMS	0.000249	<0.000005	0.00249	<0.00005	-	-	-
Pyrene by GCMS	0.000637	<0.000005	0.00637	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000224	<0.000005	0.00224	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000331	<0.000005	0.00331	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000154	<0.000005	0.00154	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000204	<0.000002	0.00204	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000387	<0.000005	0.000387	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000155	<0.000005	0.00155	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00369	<0.000082	0.0369	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.58
Conductivity (µS/cm)	244.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308972
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-11
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.58
Conductivity (µS/cm)	244.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308977
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-12
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.25	<0.2	2.5	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00272	<0.0005	0.0272	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0039	<0.001	0.039	<0.01	-	-	-
Copper	0.00862	<0.0003	0.0862	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00233	<0.0004	0.0233	<0.004	-	-	-
Selenium	0.00305	<0.001	0.0305	<0.01	-	-	-
Vanadium	0.113	<0.001	1.13	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000888	<0.00001	0.000888	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000256	<0.000005	0.000256	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000545	<0.000005	0.000545	<0.00005	-	-	-
Fluoranthene by GCMS	0.000278	<0.000005	0.00278	<0.00005	-	-	-
Anthracene by GCMS	0.0000424	<0.000005	0.000424	<0.00005	-	-	-
Phenanthrene by GCMS	0.000157	<0.000005	0.00157	<0.00005	-	-	-
Fluorene by GCMS	0.0000425	<0.000005	0.000425	<0.00005	-	-	-
Chrysene by GCMS	0.0000564	<0.000005	0.000564	<0.00005	-	-	-
Pyrene by GCMS	0.000344	<0.000005	0.00344	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000442	<0.000005	0.000442	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000843	<0.000005	0.000843	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000542	<0.000005	0.000542	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000312	<0.000002	0.000312	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000334	<0.000005	0.000334	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000466	<0.000005	0.000466	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000053	<0.000005	0.00053	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00144	<0.000082	0.0144	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	323.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308977
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-12
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	323.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308982
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-13
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.353	<0.2	3.53	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00301	<0.0005	0.0301	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0028	<0.001	0.028	<0.01	-	-	-
Copper	0.00655	<0.0003	0.0655	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00166	<0.0004	0.0166	<0.004	-	-	-
Selenium	0.00281	<0.001	0.0281	<0.01	-	-	-
Vanadium	0.112	<0.001	1.12	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0254	<0.019	0.254	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000141	<0.00001	0.00141	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000273	<0.000005	0.000273	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000973	<0.000005	0.000973	<0.00005	-	-	-
Fluoranthene by GCMS	0.000395	<0.000005	0.00395	<0.00005	-	-	-
Anthracene by GCMS	0.0000682	<0.000005	0.000682	<0.00005	-	-	-
Phenanthrene by GCMS	0.000312	<0.000005	0.00312	<0.00005	-	-	-
Fluorene by GCMS	0.0000815	<0.000005	0.000815	<0.00005	-	-	-
Chrysene by GCMS	0.0000905	<0.000005	0.000905	<0.00005	-	-	-
Pyrene by GCMS	0.000352	<0.000005	0.00352	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000792	<0.000005	0.000792	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000498	<0.000005	0.000498	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000677	<0.000002	0.000677	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000147	<0.000005	0.000147	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000412	<0.000005	0.000412	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000386	<0.000005	0.000386	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00197	<0.000082	0.0197	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.67
Conductivity (µS/cm)	254.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308982
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-13
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.012	<0.01	0.12	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	0.012	<0.01	0.12	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.012	<0.01	0.12	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.012	<0.01	0.12	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.67
Conductivity (µS/cm)	254.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308987
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-14
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.055	<0.05	0.55	<0.5	-	-	-
Arsenic	0.00249	<0.0005	0.0249	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00395	<0.001	0.0395	<0.01	-	-	-
Copper	0.00757	<0.0003	0.0757	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0018	<0.0004	0.018	<0.004	-	-	-
Selenium	0.00272	<0.001	0.0272	<0.01	-	-	-
Vanadium	0.0933	<0.001	0.933	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.305	<0.019	3.05	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000133	<0.00001	0.00133	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000304	<0.000005	0.000304	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000786	<0.000005	0.000786	<0.00005	-	-	-
Fluoranthene by GCMS	0.000282	<0.000005	0.00282	<0.00005	-	-	-
Anthracene by GCMS	0.000063	<0.000005	0.00063	<0.00005	-	-	-
Phenanthrene by GCMS	0.00021	<0.000005	0.0021	<0.00005	-	-	-
Fluorene by GCMS	0.000062	<0.000005	0.00062	<0.00005	-	-	-
Chrysene by GCMS	0.0000296	<0.000005	0.000296	<0.00005	-	-	-
Pyrene by GCMS	0.00029	<0.000005	0.0029	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000316	<0.000005	0.000316	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000333	<0.000005	0.000333	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000016	<0.000005	0.00016	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000187	<0.000002	0.000187	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000902	<0.000005	0.0000902	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0013	<0.000082	0.013	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.91
Conductivity (µS/cm)	305.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308987
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-14
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.91
Conductivity (µS/cm)	305.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308993
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-15
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00195	<0.0005	0.0195	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00286	<0.001	0.0286	<0.01	-	-	-
Copper	0.00867	<0.0003	0.0867	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00243	<0.0004	0.0243	<0.004	-	-	-
Selenium	0.00238	<0.001	0.0238	<0.01	-	-	-
Vanadium	0.0961	<0.001	0.961	<0.01	-	-	-
Zinc	0.0195	<0.001	0.195	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000122	<0.00001	0.00122	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000042	<0.000005	0.00042	<0.00005	-	-	-
Fluoranthene by GCMS	0.000314	<0.000005	0.00314	<0.00005	-	-	-
Anthracene by GCMS	0.0000702	<0.000005	0.000702	<0.00005	-	-	-
Phenanthrene by GCMS	0.00027	<0.000005	0.0027	<0.00005	-	-	-
Fluorene by GCMS	0.0000415	<0.000005	0.000415	<0.00005	-	-	-
Chrysene by GCMS	0.0000154	<0.000005	0.000154	<0.00005	-	-	-
Pyrene by GCMS	0.00029	<0.000005	0.0029	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000847	<0.000005	0.0000847	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000101	<0.000002	0.000101	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00125	<0.000082	0.0125	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.71
Conductivity (µS/cm)	348.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308993
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-15
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.71
Conductivity (µS/cm)	348.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308997
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-16
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00183	<0.0005	0.0183	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00283	<0.001	0.0283	<0.01	-	-	-
Copper	0.00733	<0.0003	0.0733	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00218	<0.0004	0.0218	<0.004	-	-	-
Selenium	0.00202	<0.001	0.0202	<0.01	-	-	-
Vanadium	0.09	<0.001	0.9	<0.01	-	-	-
Zinc	0.0132	<0.001	0.132	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.202	<0.019	2.02	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000112	<0.00001	0.00112	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000147	<0.000005	0.000147	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000496	<0.000005	0.000496	<0.00005	-	-	-
Fluoranthene by GCMS	0.000198	<0.000005	0.00198	<0.00005	-	-	-
Anthracene by GCMS	0.0000464	<0.000005	0.000464	<0.00005	-	-	-
Phenanthrene by GCMS	0.00014	<0.000005	0.0014	<0.00005	-	-	-
Fluorene by GCMS	0.0000413	<0.000005	0.000413	<0.00005	-	-	-
Chrysene by GCMS	0.0000174	<0.000005	0.000174	<0.00005	-	-	-
Pyrene by GCMS	0.00021	<0.000005	0.0021	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000276	<0.000005	0.000276	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000154	<0.000002	0.000154	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000915	<0.000082	0.00915	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.94
Conductivity (µS/cm)	379.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18308997
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-16
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	14-Sep-2018
pH (pH Units)	10.94
Conductivity (µS/cm)	379.00
Temperature (°C)	19.20
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Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18309001
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0053	<0.0005	0.053	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00197	<0.001	0.0197	<0.01	-	-	-
Copper	0.00645	<0.0003	0.0645	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00307	<0.003	0.0307	<0.03	-	-	-
Nickel	0.00187	<0.0004	0.0187	<0.004	-	-	-
Selenium	0.00379	<0.001	0.0379	<0.01	-	-	-
Vanadium	0.13	<0.001	1.3	<0.01	-	-	-
Zinc	0.00496	<0.001	0.0496	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.394	<0.019	3.94	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000163	<0.00001	0.00163	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000424	<0.000005	0.000424	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000962	<0.000005	0.000962	<0.00005	-	-	-
Fluoranthene by GCMS	0.000942	<0.000005	0.00942	<0.00005	-	-	-
Anthracene by GCMS	0.000134	<0.000005	0.00134	<0.00005	-	-	-
Phenanthrene by GCMS	0.00039	<0.000005	0.0039	<0.00005	-	-	-
Fluorene by GCMS	0.0000903	<0.000005	0.000903	<0.00005	-	-	-
Chrysene by GCMS	0.000401	<0.000005	0.00401	<0.00005	-	-	-
Pyrene by GCMS	0.000815	<0.000005	0.00815	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000402	<0.000005	0.00402	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000515	<0.000005	0.00515	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000218	<0.000005	0.00218	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000272	<0.000002	0.00272	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000636	<0.000005	0.000636	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000295	<0.000005	0.00295	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000184	<0.000005	0.00184	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00502	<0.000082	0.0502	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Sep-2018
pH (pH Units)	10.24
Conductivity (µS/cm)	226.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	180912-69
Lab Sample Number(s)	18309001
Sampled Date	11-Sep-2018
Customer Sample Ref.	W153-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	15-Sep-2018
pH (pH Units)	10.24
Conductivity (µS/cm)	226.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	180912-69	**Client Reference:**		**Report Number:**	475212
Location:	Llanwern	**Order Number:**	LLA479	**Superseded Report:**	473916

Test Completion Dates

Lab Sample No(s)	18308920	18309001	18308926	18308933	18308938	18308944	18308950	18308956	18308963	18308967
Customer Sample Ref.	W153-01	W153-02	W153-03	W153-04	W153-05	W153-06	W153-07	W153-08	W153-09	W153-10
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	25-Sep-2018		25-Sep-2018		19-Sep-2018		25-Sep-2018		25-Sep-2018	
Ammoniacal Nitrogen	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	19-Sep-2018	19-Sep-2018	17-Sep-2018
Ammonium Soil by Titration	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018
Anions by Kone (soil)	17-Sep-2018		17-Sep-2018		17-Sep-2018		17-Sep-2018		17-Sep-2018	
Asbestos ID in Solid Samples	18-Sep-2018		18-Sep-2018		19-Sep-2018		19-Sep-2018		18-Sep-2018	
Calorific Value (S)*	02-Oct-2018	02-Oct-2018	02-Oct-2018	02-Oct-2018	02-Oct-2018	02-Oct-2018	03-Oct-2018	02-Oct-2018		
CEN 10:1 Leachate (1 Stage)	15-Sep-2018	15-Sep-2018	15-Sep-2018	15-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	15-Sep-2018	14-Sep-2018	14-Sep-2018
CEN Readings	16-Sep-2018	16-Sep-2018	16-Sep-2018	16-Sep-2018	15-Sep-2018	15-Sep-2018	15-Sep-2018	16-Sep-2018	15-Sep-2018	15-Sep-2018
Cyanide Comp/Free/Total/Thiocyanate	19-Sep-2018	19-Sep-2018	24-Sep-2018	24-Sep-2018	24-Sep-2018	19-Sep-2018	19-Sep-2018	24-Sep-2018	19-Sep-2018	19-Sep-2018
Dissolved Metals by ICP-MS	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018
EPH CWG (Aliphatic) Aqueous GC (W)	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018
EPH CWG (Aliphatic) GC (S)	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018
EPH CWG (Aromatic) Aqueous GC (W)	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018
EPH CWG (Aromatic) GC (S)	18-Nov-2018	18-Nov-2018	18-Sep-2018	18-Sep-2018	18-Nov-2018	18-Sep-2018	18-Nov-2018	18-Nov-2018	18-Sep-2018	18-Sep-2018
GRO by GC-FID (S)	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018
GRO by GC-FID (W)	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018
Mercury Dissolved	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018
Metals in solid samples by OES	19-Sep-2018	18-Sep-2018	19-Sep-2018	18-Sep-2018	17-Sep-2018	18-Sep-2018	19-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018
PAH by GCMS	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018
PAH Spec MS - Aqueous (W)	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018
pH	17-Sep-2018	18-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	18-Sep-2018	18-Sep-2018
pH Value	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	18-Sep-2018	17-Sep-2018	17-Sep-2018
Phenols by HPLC (S)	17-Sep-2018	18-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	19-Sep-2018	18-Sep-2018
Sample description	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018
Total Organic Carbon	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018
Total Sulphate	19-Sep-2018		19-Sep-2018		19-Sep-2018		19-Sep-2018		19-Sep-2018	
Total Sulphur	17-Sep-2018		17-Sep-2018		17-Sep-2018		17-Sep-2018		17-Sep-2018	
TPH CWG (W)	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018
TPH CWG GC (S)	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018
VOC MS (S)	14-Sep-2018	16-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018

Lab Sample No(s)	18308972	18308977	18308982	18308987	18308993	18308997
Customer Sample Ref.	W153-11	W153-12	W153-13	W153-14	W153-15	W153-16
AGS Ref.						
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	25-Sep-2018		19-Sep-2018		19-Sep-2018	
Ammoniacal Nitrogen	19-Sep-2018	19-Sep-2018	19-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018
Ammonium Soil by Titration	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018
Anions by Kone (soil)	19-Sep-2018		17-Sep-2018		17-Sep-2018	
Asbestos ID in Solid Samples	19-Sep-2018		19-Sep-2018		19-Sep-2018	
CEN 10:1 Leachate (1 Stage)	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018
CEN Readings	15-Sep-2018	15-Sep-2018	15-Sep-2018	15-Sep-2018	15-Sep-2018	15-Sep-2018
Cyanide Comp/Free/Total/Thiocyanate	24-Sep-2018	24-Sep-2018	24-Sep-2018	24-Sep-2018	24-Sep-2018	24-Sep-2018
Dissolved Metals by ICP-MS	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018
EPH CWG (Aliphatic) Aqueous GC (W)	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018
EPH CWG (Aliphatic) GC (S)	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018
EPH CWG (Aromatic) Aqueous GC (W)	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018
EPH CWG (Aromatic) GC (S)	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018
GRO by GC-FID (S)	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	14-Sep-2018
GRO by GC-FID (W)	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018
Mercury Dissolved	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018
Metals in solid samples by OES	19-Sep-2018	18-Sep-2018	17-Sep-2018	18-Sep-2018	17-Sep-2018	18-Sep-2018
PAH by GCMS	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018
PAH Spec MS - Aqueous (W)	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018
pH	17-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018
pH Value	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018
Phenols by HPLC (S)	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018	17-Sep-2018
Sample description	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018	13-Sep-2018
Total Organic Carbon	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018
Total Sulphate	19-Sep-2018		19-Sep-2018		19-Sep-2018	
Total Sulphur	17-Sep-2018		17-Sep-2018		17-Sep-2018	
TPH CWG (W)	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018	19-Sep-2018
TPH CWG GC (S)	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018	18-Sep-2018
VOC MS (S)	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018	14-Sep-2018

CERTIFICATE OF ANALYSIS

Work Order	: **PR1893662**	Issue Date	: 01-Oct-2018
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 180912-69	Page	: 1 of 3
		Date Samples Received	: 14-Sep-2018
C-O-C number	: ----	Quote number	: PR2018ALSAL-GB0001 (CZ-256-17-1008)
Site	: ----	Date of test	: 17-Sep-2018 - 01-Oct-2018
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.
The laboratory declares that the test results relate only to the listed samples.
The IC determination of chlorides, fluorides, sulfates and nitrates, as needed for the calculation of reported results, was performed using an accredited method of a subcontractor.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2005

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

L 1163

Analytical Results

Sub-Matrix: INDUSTRIAL SOLID			Client sample ID	18317813		18318062		18319042	
			Laboratory sample ID	PR1893662-001		PR1893662-002		PR1893662-003	
			Client sampling date / time	17-Sep-2018 00:00		17-Sep-2018 00:00		17-Sep-2018 00:00	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	7.11	± 11.0%	9.27	± 10.6%	5.78	± 11.5%
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	6.06	± 11.4%	7.93	± 10.8%	5.01	± 12.0%
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	6.89	± 11.1%	9.07	± 10.6%	5.57	± 11.6%
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	5.57	± 11.6%	7.42	± 11.0%	4.52	± 12.4%
Water Analytical M(ad)	I-WA-GR	0.50	%	1.01	± 38.5%	0.87	± 43.3%	1.89	± 26.6%
Water Gross M(ex)	I-WG-GR	0.50	%	13.6	± 20.2%	13.8	± 20.1%	11.6	± 20.2%
Water Total M(ar)	I-WT-CC	0.50	%	14.4	----	14.5	----	13.3	----

Sub-Matrix: INDUSTRIAL SOLID			Client sample ID	18318166		18318190		18318903	
			Laboratory sample ID	PR1893662-004		PR1893662-005		PR1893662-006	
			Client sampling date / time	17-Sep-2018 00:00		17-Sep-2018 00:00		17-Sep-2018 00:00	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	5.41	± 11.7%	6.58	± 11.2%	6.71	± 11.2%
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	4.76	± 12.2%	5.77	± 11.5%	5.62	± 11.6%
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	5.22	± 11.9%	6.34	± 11.3%	6.46	± 11.2%
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	4.31	± 12.6%	5.29	± 11.8%	5.04	± 12.0%
Water Analytical M(ad)	I-WA-GR	0.50	%	1.89	± 26.6%	1.31	± 32.3%	1.45	± 30.4%
Water Gross M(ex)	I-WG-GR	0.50	%	10.4	± 20.2%	11.0	± 20.2%	14.9	± 20.1%
Water Total M(ar)	I-WT-CC	0.50	%	12.1	----	12.2	----	16.2	----

Sub-Matrix: INDUSTRIAL SOLID			Client sample ID	18318698		----		----	
			Laboratory sample ID	PR1893662-007		----		----	
			Client sampling date / time	17-Sep-2018 00:00		----		----	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	6.56	± 11.2%	----	----	----	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	5.72	± 11.6%	----	----	----	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	6.33	± 11.3%	----	----	----	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	5.22	± 11.9%	----	----	----	----
Water Analytical M(ad)	I-WA-GR	0.50	%	1.03	± 38.0%	----	----	----	----
Water Gross M(ex)	I-WG-GR	0.50	%	11.8	± 20.2%	----	----	----	----
Water Total M(ar)	I-WT-CC	0.50	%	12.8	----	----	----	----	----

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, delivery date in brackets without a time component will be displayed instead. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.
Key: LOR = Limit of reporting; MU = Measurement Uncertainty

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN ISO 18125, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3, CSN P CEN/TS 16023) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.

Preparation Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN 14918, CSN EN 15400, CSN EN 15170) Determination of gross calorific value by calorimetric method and calculation of net calorific value.
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.
The calculation methods of summation parameters are available on request in the client service.

CERTIFICATE OF ANALYSIS

Work Order	: **PR1893650**	Issue Date	: 01-Oct-2018
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 180912-69	Page	: 1 of 2
		Date Samples Received	: 14-Sep-2018
C-O-C number	: ----	Quote number	: PR2018ALSAL-GB0001 (CZ-256-17-1008)
Site	: ----	Date of test	: 17-Sep-2018 - 01-Oct-2018
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.
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The IC determination of chlorides, fluorides, sulfates and nitrates, as needed for the calculation of reported results, was performed using an accredited method of a subcontractor.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2005

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

L 1163

Analytical Results

Sub-Matrix: **INDUSTRIAL SOLID**			Client sample ID	18319211		----		----	
			Laboratory sample ID	PR1893650-001		----		----	
			Client sampling date / time	11-Sep-2018 00:00		----		----	
Parameter	*Method*	*LOR*	*Unit*	**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	**5.89**	± 11.5%	----	----	----	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	**5.12**	± 11.9%	----	----	----	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	**5.69**	± 11.6%	----	----	----	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	**4.65**	± 12.3%	----	----	----	----
Water Analytical M(ad)	I-WA-GR	0.50	%	**1.20**	± 34.2%	----	----	----	----
Water Gross M(ex)	I-WG-GR	0.50	%	**12.1**	± 20.2%	----	----	----	----
Water Total M(ar)	I-WT-CC	0.50	%	**13.1**	----	----	----	----	----

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, delivery date in brackets without a time component will be displayed instead. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.
Key: LOR = Limit of reporting; MU = Measurement Uncertainty

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN ISO 18125, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3, CSN P CEN/TS 16023) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.

Preparation Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN 14918, CSN EN 15400, CSN EN 15170) Determination of gross calorific value by calorimetric method and calculation of net calorific value.
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.
The calculation methods of summation parameters are available on request in the client service.

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	16 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181018-22
Your Reference:	
Location:	Llanwern
Report No:	481508

This report has been revised and directly supersedes 481496 in its entirety.

We received 51 samples on Thursday October 18, 2018 and 50 of these samples were scheduled for analysis which was completed on Friday November 16, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18548486	3C-H4		0.50 - 0.50	17/10/2018
18548490	3C-H4		1.00 - 1.00	17/10/2018
18548494	3C-H4		2.00 - 2.00	17/10/2018
18548372	3C-H5		0.30 - 0.30	17/10/2018
18548388	3C-H5		0.80 - 0.80	17/10/2018
18548403	3C-H5		1.50 - 1.50	17/10/2018
18548501	3C-H4-V		2.70 - 2.70	17/10/2018
18548415	3C-H5-V		2.70 - 2.70	17/10/2018
18548458	3C-I4		0.50 - 0.50	17/10/2018
18548465	3C-I4		1.00 - 1.00	17/10/2018
18548469	3C-I4		2.00 - 2.00	17/10/2018
18548282	3C-I5		0.30 - 0.30	17/10/2018
18548317	3C-I5		0.80 - 0.80	17/10/2018
18548332	3C-I5		1.50 - 1.50	17/10/2018
18548346	3C-I5		2.00 - 2.00	17/10/2018
18548126	4C-I5		0.50 - 0.50	17/10/2018
18548131	4C-I5		1.00 - 1.00	17/10/2018
18548150	4C-I6		0.50 - 0.50	17/10/2018
18548160	4C-I6		1.00 - 1.00	17/10/2018
18548185	4C-I7		0.50 - 0.50	17/10/2018
18548198	4C-I7		1.00 - 1.00	17/10/2018
18548239	4C-I8		0.50 - 0.50	17/10/2018
18548253	4C-I8		1.00 - 1.00	17/10/2018
18548476	3C-I4-V		3.40 - 3.40	17/10/2018
18548359	3C-I5-V		3.20 - 3.20	17/10/2018
18548171	4C-I6-V		2.20 - 2.20	17/10/2018
18548220	4C-I7-V		1.80 - 1.80	17/10/2018
18548268	4C-I8-V		1.90 - 1.90	17/10/2018
18548424	3C-J4		0.50 - 0.50	17/10/2018
18548433	3C-J4		0.70 - 1.30	17/10/2018
18548447	3C-J4		1.80 - 1.80	17/10/2018
18548070	4C-J1		0.50 - 0.50	17/10/2018
18548138	4C-J1		1.00 - 1.00	17/10/2018
18548298	4C-J1		2.00 - 2.00	17/10/2018
18548508	4C-J2		0.50 - 0.50	17/10/2018
18548523	4C-J2		1.00 - 1.00	17/10/2018
18548515	4C-J2		2.00 - 2.00	17/10/2018
18548532	4C-J3		0.50 - 0.50	17/10/2018
18548543	4C-J3		1.00 - 1.00	17/10/2018
18548551	4C-J3		1.50 - 1.50	17/10/2018
18548079	4C-J4		0.50 - 0.50	17/10/2018
18548087	4C-J4		1.00 - 1.00	17/10/2018
18548092	4C-J4		1.40 - 1.40	17/10/2018
18548111	4C-J5		0.50 - 0.50	17/10/2018
18548115	4C-J5		1.00 - 1.00	17/10/2018
18548453	3C-J4-V		3.70 - 3.70	17/10/2018
18548442	4C-J1-V		2.70 - 2.70	17/10/2018
18548074	4C-J3-V		1.90 - 1.90	17/10/2018
18548098	4C-J4-V		2.00 - 2.00	17/10/2018
18548120	4C-J5-V		1.70 - 1.70	17/10/2018
18548557	NO ID			

Maximum Sample/Coolbox Temperature (°C) :

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

12.4

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			18548486	3C-H4		0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18548490	3C-H4		1.00 - 1.00	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18548494	3C-H4		2.00 - 2.00	250g Amber Jar (ALE210)	S
							400g Tub (ALE214)	S
			18548372	3C-H5		0.30 - 0.30	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18548388	3C-H5		0.80 - 0.80	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18548403	3C-H5		1.50 - 1.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			18548501	3C-H4-V		2.70 - 2.70	250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 25		X				X			X					X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 38	X			X			X	X			X			X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 50		X			X		X			X			X			X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 25		X					X			X						X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 25	X							X	X					X					
Calorific Value (S)*	All	NDPs: 0 Tests: 2								X								X			
CEN Readings	All	NDPs: 0 Tests: 38	X			X				X	X			X			X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 88	X	X		X	X		X	X	X	X		X	X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 38	X			X				X	X			X			X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38	X			X				X	X			X			X				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 50		X			X		X			X			X			X		X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38	X			X				X	X			X			X				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 50		X			X		X			X			X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 50			X			X	X				X			X			X		X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 38	X			X				X	X			X			X				

18548346	3C-I5		2.00 - 2.00	1kg TUB	S			x			x			x	x	x	x			x				x
18548332	3C-I5		1.50 - 1.50	60g VOC (ALE215)	S																		x	
				250g Amber Jar (ALE210)	S		x			x		x				x				x			x		
				1kg TUB	S			x			x			x	x	x	x			x				x
18548317	3C-I5		0.80 - 0.80	60g VOC (ALE215)	S																		x	
				250g Amber Jar (ALE210)	S					x						x				x					
				1kg TUB	S			x						x	x	x	x			x				x
18548282	3C-I5		0.30 - 0.30	60g VOC (ALE215)	S																		x	
				250g Amber Jar (ALE210)	S		x			x		x				x				x			x		
				1kg TUB	S			x			x			x	x	x	x			x				x
18548469	3C-I4		2.00 - 2.00	60g VOC (ALE215)	S																		x	
				250g Amber Jar (ALE210)	S					x						x				x					
				1kg TUB	S			x						x	x	x	x			x				x
18548465	3C-I4		1.00 - 1.00	60g VOC (ALE215)	S																		x	
				250g Amber Jar (ALE210)	S		x			x		x				x				x			x		
				1kg TUB	S			x			x			x	x	x	x			x				x
18548458	3C-I4		0.50 - 0.50	60g VOC (ALE215)	S																		x	
				250g Amber Jar (ALE210)	S		x			x		x				x				x			x		
				1kg TUB	S			x			x			x	x	x	x			x				x
18548415	3C-H5-V		2.70 - 2.70	60g VOC (ALE215)	S																		x	
				250g Amber Jar (ALE210)	S					x						x				x					

Validated

CERTIFICATE OF ANALYSIS

SDG: 181018-22 **Client Reference:** **Report Number:** 481508
Location: Llanwern **Order Number:** LLA491 **Superseded Report:** 481496

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
Mercury Dissolved	All	NDPs: 0 Tests: 38	18548486	3C-H4		0.50 - 0.50	1kg TUB	S
			18548490	3C-H4		1.00 - 1.00	1kg TUB	S
			18548494	3C-H4		2.00 - 2.00	400g Tub (ALE214)	S
			18548372	3C-H5		0.30 - 0.30	1kg TUB	S
			18548388	3C-H5		0.80 - 0.80	1kg TUB	S
			18548403	3C-H5		1.50 - 1.50	1kg TUB	S
			18548501	3C-H4-V		2.70 - 2.70	1kg TUB	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 50	18548486	3C-H4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18548490	3C-H4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18548494	3C-H4		2.00 - 2.00	250g Amber Jar (ALE210)	S
			18548372	3C-H5		0.30 - 0.30	250g Amber Jar (ALE210)	S
			18548388	3C-H5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18548403	3C-H5		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18548501	3C-H4-V		2.70 - 2.70	250g Amber Jar (ALE210)	S
PAH by GCMS	All	NDPs: 0 Tests: 50	18548486	3C-H4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18548490	3C-H4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18548494	3C-H4		2.00 - 2.00	250g Amber Jar (ALE210)	S
			18548372	3C-H5		0.30 - 0.30	250g Amber Jar (ALE210)	S
			18548388	3C-H5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18548403	3C-H5		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18548501	3C-H4-V		2.70 - 2.70	250g Amber Jar (ALE210)	S
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38	18548486	3C-H4		0.50 - 0.50	1kg TUB	S
			18548490	3C-H4		1.00 - 1.00	1kg TUB	S
			18548494	3C-H4		2.00 - 2.00	400g Tub (ALE214)	S
			18548372	3C-H5		0.30 - 0.30	1kg TUB	S
			18548388	3C-H5		0.80 - 0.80	1kg TUB	S
			18548403	3C-H5		1.50 - 1.50	1kg TUB	S
			18548501	3C-H4-V		2.70 - 2.70	1kg TUB	S
pH	All	NDPs: 0 Tests: 50	18548486	3C-H4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18548490	3C-H4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18548494	3C-H4		2.00 - 2.00	250g Amber Jar (ALE210)	S
			18548372	3C-H5		0.30 - 0.30	250g Amber Jar (ALE210)	S
			18548388	3C-H5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18548403	3C-H5		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18548501	3C-H4-V		2.70 - 2.70	250g Amber Jar (ALE210)	S
pH Value	All	NDPs: 0 Tests: 38	18548486	3C-H4		0.50 - 0.50	1kg TUB	S
			18548490	3C-H4		1.00 - 1.00	1kg TUB	S
			18548494	3C-H4		2.00 - 2.00	400g Tub (ALE214)	S
			18548372	3C-H5		0.30 - 0.30	1kg TUB	S
			18548388	3C-H5		0.80 - 0.80	1kg TUB	S
			18548403	3C-H5		1.50 - 1.50	1kg TUB	S
			18548501	3C-H4-V		2.70 - 2.70	1kg TUB	S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50	18548486	3C-H4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18548490	3C-H4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18548494	3C-H4		2.00 - 2.00	250g Amber Jar (ALE210)	S
			18548372	3C-H5		0.30 - 0.30	250g Amber Jar (ALE210)	S
			18548388	3C-H5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18548403	3C-H5		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18548501	3C-H4-V		2.70 - 2.70	250g Amber Jar (ALE210)	S
Sample description	All	NDPs: 0 Tests: 50	18548486	3C-H4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18548490	3C-H4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18548494	3C-H4		2.00 - 2.00	250g Amber Jar (ALE210)	S
			18548372	3C-H5		0.30 - 0.30	250g Amber Jar (ALE210)	S
			18548388	3C-H5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18548403	3C-H5		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18548501	3C-H4-V		2.70 - 2.70	250g Amber Jar (ALE210)	S
Total Organic Carbon	All	NDPs: 0 Tests: 50	18548486	3C-H4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18548490	3C-H4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18548494	3C-H4		2.00 - 2.00	250g Amber Jar (ALE210)	S
			18548372	3C-H5		0.30 - 0.30	250g Amber Jar (ALE210)	S
			18548388	3C-H5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18548403	3C-H5		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18548501	3C-H4-V		2.70 - 2.70	250g Amber Jar (ALE210)	S
Total Sulphate	All	NDPs: 0 Tests: 25	18548486	3C-H4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18548490	3C-H4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18548494	3C-H4		2.00 - 2.00	250g Amber Jar (ALE210)	S
			18548372	3C-H5		0.30 - 0.30	250g Amber Jar (ALE210)	S
			18548388	3C-H5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18548403	3C-H5		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18548501	3C-H4-V		2.70 - 2.70	250g Amber Jar (ALE210)	S
Total Sulphur	All	NDPs: 0 Tests: 25	18548486	3C-H4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18548490	3C-H4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18548494	3C-H4		2.00 - 2.00	250g Amber Jar (ALE210)	S
			18548372	3C-H5		0.30 - 0.30	250g Amber Jar (ALE210)	S
			18548388	3C-H5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18548403	3C-H5		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18548501	3C-H4-V		2.70 - 2.70	250g Amber Jar (ALE210)	S
TPH CWG (W)	All	NDPs: 0 Tests: 38	18548486	3C-H4		0.50 - 0.50	1kg TUB	S
			18548490	3C-H4		1.00 - 1.00	1kg TUB	S
			18548494	3C-H4		2.00 - 2.00	400g Tub (ALE214)	S
			18548372	3C-H5		0.30 - 0.30	1kg TUB	S
			18548388	3C-H5		0.80 - 0.80	1kg TUB	S
			18548403	3C-H5		1.50 - 1.50	1kg TUB	S
			18548501	3C-H4-V		2.70 - 2.70	1kg TUB	S
TPH CWG GC (S)	All	NDPs: 0 Tests: 50	18548486	3C-H4		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18548490	3C-H4		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18548494	3C-H4		2.00 - 2.00	250g Amber Jar (ALE210)	S
			18548372	3C-H5		0.30 - 0.30	250g Amber Jar (ALE210)	S
			18548388	3C-H5		0.80 - 0.80	250g Amber Jar (ALE210)	S
			18548403	3C-H5		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18548501	3C-H4-V		2.70 - 2.70	250g Amber Jar (ALE210)	S
VOC MS (S)	All	NDPs: 0 Tests: 50	18548486	3C-H4		0.50 - 0.50	60g VOC (ALE215)	S
			18548490	3C-H4		1.00 - 1.00	60g VOC (ALE215)	S
			18548494	3C-H4		2.00 - 2.00	60g VOC (ALE215)	S
			18548372	3C-H5		0.30 - 0.30	60g VOC (ALE215)	S
			18548388	3C-H5		0.80 - 0.80	60g VOC (ALE215)	S
			18548403	3C-H5		1.50 - 1.50	60g VOC (ALE215)	S
			18548501	3C-H4-V		2.70 - 2.70	60g VOC (ALE215)	S

18548346	3C-I5		2.00 - 2.00	1kg TUB	S		x				x			x								
18548332	3C-I5		1.50 - 1.50	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S			x	x			x			x	x	x	x	x			x	
				1kg TUB	S		x				x			x								
18548317	3C-I5		0.80 - 0.80	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S			x	x			x			x	x	x					x	
				1kg TUB	S		x				x			x								
18548282	3C-I5		0.30 - 0.30	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S			x	x			x			x	x	x	x	x			x	
				1kg TUB	S		x				x			x								
18548469	3C-I4		2.00 - 2.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S			x	x			x			x	x	x					x	
				1kg TUB	S		x				x			x								
18548465	3C-I4		1.00 - 1.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S			x	x			x			x	x	x	x	x			x	
				1kg TUB	S		x				x			x								
18548458	3C-I4		0.50 - 0.50	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S			x	x			x			x	x	x	x	x			x	
				1kg TUB	S		x				x			x								
18548415	3C-H5-V		2.70 - 2.70	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S			x	x			x			x	x	x					x	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18548346		18548126			18548131			18548150			18548160			18548185			18548198
Customer Sample Reference			3C-i5		4C-i5			4C-i5			4C-i6			4C-i6			4C-i7			4C-i7
AGS Reference																				
Depth (m)			2.00 - 2.00		0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 25	X			X			X			X						X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 50	X			X			X			X			X			X				X
Anions by Kone (soil)	All	NDPs: 0 Tests: 25	X			X			X			X						X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 25			X			X			X						X				
CEN Readings	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 88	X		X	X		X	X		X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 50	X			X			X			X			X			X				X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 50	X			X			X			X			X			X				X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 50		X			X			X			X			X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18548346		18548126			18548131			18548150			18548160			18548185			18548198
Customer Sample Reference			3C-I5		4C-I5			4C-I5			4C-I6			4C-I6			4C-I7			4C-I7
AGS Reference																				
Depth (m)			2.00 - 2.00		0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
pH	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 25	X			X			X			X						X			
Total Sulphur	All	NDPs: 0 Tests: 25	X			X			X			X						X			
TPH CWG (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 50		X			X			X			X			X			X		

18548433	3C-J4		0.70 - 1.30	1kg TUB	S				X		X							X		
18548424	3C-J4		0.50 - 0.50	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X						X	
				1kg TUB	S				X		X							X		
18548268	4C-I8-V		1.90 - 1.90	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X						X	
18548220	4C-I7-V		1.80 - 1.80	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X						X	
18548171	4C-I6-V		2.20 - 2.20	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X						X	
18548359	3C-I5-V		3.20 - 3.20	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X						X	
18548476	3C-I4-V		3.40 - 3.40	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X						X	
18548253	4C-I8		1.00 - 1.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X						X	
				1kg TUB	S				X		X							X		
18548239	4C-I8		0.50 - 0.50	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X			X		
				1kg TUB	S				X		X							X		
18548198	4C-I7		1.00 - 1.00	60g VOC (ALE215)	S															X

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18548433		18548447			18548070			18548138			18548298			18548508			18548523
Customer Sample Reference			3C-J4		3C-J4			4C-J1			4C-J1			4C-J1			4C-J2			4C-J2
AGS Reference																				
Depth (m)			0.70 - 1.30		1.80 - 1.80			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			0.50 - 0.50			1.00 - 1.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 25	X			X			X			X						X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 50	X			X			X			X			X			X				X
Anions by Kone (soil)	All	NDPs: 0 Tests: 25	X			X			X			X						X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 25			X			X			X						X				
CEN Readings	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 88	X		X	X		X	X		X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 50	X			X			X			X			X			X				X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 50	X			X			X			X			X			X				X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 50		X			X			X			X			X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	

18548092	4C-J4		1.40 - 1.40	250g Amber Jar (ALE210)	S		x			x		x				x				x				
				1kg TUB	S			x				x		x		x		x		x				x		x
18548087	4C-J4		1.00 - 1.00	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S					x				x				x				x				
				1kg TUB	S			x						x		x		x				x				x
18548079	4C-J4		0.50 - 0.50	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S		x			x		x				x				x						
				1kg TUB	S			x				x		x		x		x				x				x
18548551	4C-J3		1.50 - 1.50	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S		x			x		x				x				x						
				1kg TUB	S			x				x		x		x		x				x				x
18548543	4C-J3		1.00 - 1.00	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S		x			x		x				x				x						
				1kg TUB	S			x				x		x		x		x				x				x
18548532	4C-J3		0.50 - 0.50	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S					x				x				x				x				
				1kg TUB	S			x						x		x		x				x				x
18548515	4C-J2		2.00 - 2.00	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S		x			x		x				x				x						
				1kg TUB	S			x				x		x		x		x				x				x
18548523	4C-J2		1.00 - 1.00	60g VOC (ALE215)	S																		x		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18548433		18548447			18548070			18548138			18548298			18548508			18548523
Customer Sample Reference			3C-J4		3C-J4			4C-J1			4C-J1			4C-J1			4C-J2			4C-J2
AGS Reference																				
Depth (m)			0.70 - 1.30		1.80 - 1.80			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			0.50 - 0.50			1.00 - 1.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
pH	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 25	X			X			X			X						X			
Total Sulphur	All	NDPs: 0 Tests: 25	X			X			X			X						X			
TPH CWG (W)	All	NDPs: 0 Tests: 38			X			X			X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 50	X			X			X			X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 50		X			X			X			X			X			X		

18548092	4C-J4		1.40 - 1.40	250g Amber Jar (ALE210)	S		x		x			x			x		x	x	x	x	x		x	
				1kg TUB	S					x			x									x		
18548087	4C-J4		1.00 - 1.00	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x	x	x				x	
				1kg TUB	S					x			x									x		
18548079	4C-J4		0.50 - 0.50	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x	x	x	x	x		x	
				1kg TUB	S					x			x									x		
18548551	4C-J3		1.50 - 1.50	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x	x	x	x	x		x	
				1kg TUB	S					x			x									x		
18548543	4C-J3		1.00 - 1.00	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x	x	x	x	x		x	
				1kg TUB	S					x			x									x		
18548532	4C-J3		0.50 - 0.50	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x	x	x				x	
				1kg TUB	S					x			x									x		
18548515	4C-J2		2.00 - 2.00	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x	x	x	x	x		x	
				1kg TUB	S					x			x									x		
18548523	4C-J2		1.00 - 1.00	60g VOC (ALE215)	S																			x

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18548092	18548111				18548115			18548453		18548442			18548074		18548098		18548120	
Customer Sample Reference			4C-J4	4C-J5				4C-J5			3C-J4-V		4C-J1-V			4C-J3-V		4C-J4-V		4C-J5-V	
AGS Reference																					
Depth (m)			1.40 - 1.40	0.50 - 0.50				1.00 - 1.00			3.70 - 3.70		2.70 - 2.70			1.90 - 1.90		2.00 - 2.00		1.70 - 1.70	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)		1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)		250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S		S	S	S	S	S	S	S		S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 25							X												
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 38		X				X													
Ammonium Soil by Titration	All	NDPs: 0 Tests: 50			X				X		X		X			X		X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 25							X												
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 25						X													
CEN Readings	All	NDPs: 0 Tests: 38		X				X													
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 88		X	X			X	X		X		X			X		X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 38		X				X													
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38		X				X													
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 50			X				X		X		X			X		X		X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 38		X				X													
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 50			X				X		X		X			X		X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 50	X			X				X		X		X			X		X		X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 38		X				X													
Mercury Dissolved	All	NDPs: 0 Tests: 38		X				X													

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | | |

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18548486	3C-H4	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18548490	3C-H4	1.00 - 1.00	Black	Sand	Stones	Vegetation
18548494	3C-H4	2.00 - 2.00	Black	Sand	Stones	Vegetation
18548372	3C-H5	0.30 - 0.30	Grey	Sandy Loam	Vegetation	Stones
18548388	3C-H5	0.80 - 0.80	Dark Brown	Sand	Stones	None
18548403	3C-H5	1.50 - 1.50	Dark Brown	Sand	Stones	None
18548501	3C-H4-V	2.70 - 2.70	Dark Brown	Sandy Clay Loam	Stones	Vegetation
18548415	3C-H5-V	2.70 - 2.70	Dark Brown	Loamy Sand	Stones	Vegetation
18548458	3C-I4	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18548465	3C-I4	1.00 - 1.00	Dark Brown	Sand	Stones	None
18548469	3C-I4	2.00 - 2.00	Dark Brown	Sand	Stones	Crushed Brick
18548282	3C-I5	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
18548317	3C-I5	0.80 - 0.80	Black	Sand	Stones	Vegetation
18548332	3C-I5	1.50 - 1.50	Black	Sand	Stones	None
18548346	3C-I5	2.00 - 2.00	Black	Stone/Soil	Stones	None
18548126	4C-I5	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18548131	4C-I5	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18548150	4C-I6	0.50 - 0.50	Dark Brown	Loamy Sand	Vegetation	Stones
18548160	4C-I6	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Vegetation
18548185	4C-I7	0.50 - 0.50	Dark Brown	Sand	Stones	None
18548198	4C-I7	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
18548239	4C-I8	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18548253	4C-I8	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18548476	3C-I4-V	3.40 - 3.40	Dark Brown	Silty Clay Loam	Vegetation	None
18548359	3C-I5-V	3.20 - 3.20	Dark Brown	Sandy Clay Loam	None	None
18548171	4C-I6-V	2.20 - 2.20	Grey	Sandy Loam	Vegetation	Stones
18548220	4C-I7-V	1.80 - 1.80	Grey	Sandy Loam	Stones	Vegetation
18548268	4C-I8-V	1.90 - 1.90	Grey	Silty Clay	None	None
18548424	3C-J4	0.50 - 0.50	Dark Brown	Clay Loam	Vegetation	Stones
18548433	3C-J4	0.70 - 1.30	Dark Brown	Loamy Sand	Stones	Vegetation
18548447	3C-J4	1.80 - 1.80	Dark Brown	Stone/Soil	Stones	Crushed Brick
18548070	4C-J1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Crushed Brick
18548138	4C-J1	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	None
18548298	4C-J1	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	N/A
18548508	4C-J2	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Brick
18548515	4C-J2	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	None
18548523	4C-J2	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	N/A
18548532	4C-J3	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

			Colour	Description	Inclusions	Inclusions 2
18548543	4C-J3	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	N/A
18548551	4C-J3	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	N/A
18548079	4C-J4	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Crushed Brick
18548087	4C-J4	1.00 - 1.00	Black	Sand	Stones	Concrete/Aggregate
18548092	4C-J4	1.40 - 1.40	Black	Sand	Stones	None
18548111	4C-J5	0.50 - 0.50	Black	Sandy Loam	Vegetation	Stones
18548115	4C-J5	1.00 - 1.00	Black	Sandy Loam	Stones	Vegetation
18548453	3C-J4-V	3.70 - 3.70	Grey	Silty Clay	None	None
18548442	4C-J1-V	2.70 - 2.70	Grey	Silty Clay	None	None
18548074	4C-J3-V	1.90 - 1.90	Grey	Silty Clay	None	None
18548098	4C-J4-V	2.00 - 2.00	Grey	Silty Clay	None	None
18548120	4C-J5-V	1.70 - 1.70	Grey	Sandy Loam	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4	3C-H4	3C-H4	3C-H5	3C-H5	3C-H5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548486	18548490	18548494	18548372	18548388	18548403
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		26	14	15	20	8	13
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB				18.4			18.1
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB				15.3			15.6
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB				18.2			17.8
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB				14.7			15
Water Analytical M (ad)	<0.5 %	SUB				1.01			0.86
Water Gross M(ex)	<0.5 %	SUB				16.1			12.8
Water Total M(ar)	<0.5 %	SUB				17			13.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		142 M	<12 M	85 M	328 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.058 M	0.0236 M	<0.01 M	0.0109 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.278 M	0.142 M	0.0126 M	0.0109 M	0.023 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.116 M	0.0236 M	0.0378 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.452 M	0.189 M	0.0504 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.0844		0.412	0.0398		0.437
Sulphate, Total potential	<0.06 %	TM132		0.253		1.24	0.119		1.31
Soil Organic Matter (SOM)	<0.35 %	TM132		8.98 #	81.2 #	74.3 #	4.9 #	2.81 #	62.2 #
pH	1 pH Units	TM133		7.02 M	8.29 M	9.08 M	8.06 M	12.6 M	10.7 M
Cyanide, Total	<1 mg/kg	TM153		1.51 M	1.64 M	3.07 M	<1 M	1.6 M	3.23 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		15.1 M	8.2 M	9.64 M	13.4 M	<6 M	7.13 M
Cadmium	<0.02 mg/kg	TM181		0.931 M	0.386 M	0.532 M	0.0891 M	<0.2 M	0.144 M
Chromium	<0.9 mg/kg	TM181		56.4 M	53.9 M	73.8 M	41.3 M	460 M	42.3 M
Copper	<1.4 mg/kg	TM181		26.2 M	29.5 M	33.8 M	22 M	<14 M	42.9 M
Iron	<1000 mg/kg	TM181		36200 #	42900 #	39100 #	25000 #	158000 #	52100 #
Lead	<0.7 mg/kg	TM181		131 M	2080 M	96.7 M	40.4 M	52.4 M	44.8 M
Manganese	<0.13 mg/kg	TM181		1530 M	3550 M	4970 M	891 M	35200 M	2190 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		28.9 M	13.8 M	17.8 M	26.2 M	10.1 M	14.8 M
Selenium	<1 mg/kg	TM181		<1 #	2.03 #	2.23 #	<1 #	14.4 #	1.24 #
Vanadium	<0.2 mg/kg	TM181		75.5 #	56.6 #	73.7 #	65.6 #	427 #	28.7 #
Zinc	<1.9 mg/kg	TM181		555 M	634 M	594 M	140 M	400 M	245 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.0741		0.11	0.0533		0.063
Calcium	<21 mg/kg	TM224		13600		44500	8210		22500

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4	3C-H4	3C-H4	3C-H5	3C-H5	3C-H5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548486	18548490	18548494	18548372	18548388	18548403
			AGS Reference						
Magnesium	<8 mg/kg	TM224		7080		7310	6510		3160
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0758 M		0.0813 M	0.102 M		0.0428 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend	
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diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4-V	3C-H5-V	3C-I4	3C-I4	3C-I4	3C-I5
			Depth (m)	2.70 - 2.70	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548501	18548415	18548458	18548465	18548469	18548282
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		22	20	26	9.2	8.6	19
Exchangeable Ammonia as N	<12 mg/kg	TM024		164 M	<12 M	204 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0129 M	0.0875 M	<0.01 M	0.022 M	<0.01 M	0.062 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.0875 M	<0.035 M	<0.035 M	<0.035 M	0.062 M
Sulphur, Total	<0.02 %	TM132				0.032	0.159		0.142
Sulphate, Total potential	<0.06 %	TM132				0.096	0.477		0.426
Soil Organic Matter (SOM)	<0.35 %	TM132		1.76 #	4.71 #	6.19 #	<0.35 #	5.84 #	6.96 #
pH	1 pH Units	TM133		8.13 M	8.63 M	7.51 M	12.8 M	12.5 M	8.34 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	40.5 M	<1 M	<1 M	<1 M	11.2 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11 M	12.9 M	18.1 M	3.86 M	<6 M	15 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	1.31 M	0.388 M	<0.02 M	<0.2 M	2.41 M
Chromium	<0.9 mg/kg	TM181		43.9 M	46.8 M	35.1 M	464 M	734 M	276 M
Copper	<1.4 mg/kg	TM181		22.2 M	27.7 M	19.4 M	10.3 M	17.5 M	55.7 M
Iron	<1000 mg/kg	TM181		28200 #	68300 #	26700 #	132000 #	154000 #	130000 #
Lead	<0.7 mg/kg	TM181		22 M	342 M	52.6 M	8.94 M	17.2 M	423 M
Manganese	<0.13 mg/kg	TM181		891 M	4440 M	792 M	20600 M	18600 M	11900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		33.8 M	19.2 M	28.9 M	3.82 M	8.02 M	43.5 M
Selenium	<1 mg/kg	TM181		<1 #	1.31 #	<1 #	6.41 #	15 #	<10 #
Vanadium	<0.2 mg/kg	TM181		80.3 #	76.9 #	63.7 #	406 #	631 #	249 #
Zinc	<1.9 mg/kg	TM181		124 M	2560 M	179 M	63.1 M	111 M	2610 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.0615	0.301		0.168
Calcium	<21 mg/kg	TM224				8820	190000		108000
Magnesium	<8 mg/kg	TM224				6040	24900		13500
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.0512 M	0.053 M		0.134 M

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5	3C-I5	3C-I5	4C-I5	4C-I5	4C-I6
			Depth (m)	0.80 - 0.80	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548317	18548332	18548346	18548126	18548131	18548150
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.7	8.9	11	9.3	11	7.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0111 M	0.022 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0444 M	0.022 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0555 M	0.0439 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.19	0.181	1.54	1.02	0.322
Sulphate, Total potential	<0.06 %	TM132			0.57	0.543	4.62	3.06	0.966
Soil Organic Matter (SOM)	<0.35 %	TM132		29.3 #	54.5 #	26.7 #	0.94 #	1.68 #	1.66 #
pH	1 pH Units	TM133		12.6 M	12.1 M	11.7 #	10.6 M	9.19 M	10.5 M
Cyanide, Total	<1 mg/kg	TM153		12.3 M	<1 M	<1 #	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.15 M	4.03 M	3.32 #	4.13 M	6.28 M	9.64 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 #	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		220 M	165 M	49.4 #	19.6 M	22.3 M	21.7 M
Copper	<1.4 mg/kg	TM181		17.8 M	11.4 M	6.46 #	4.45 M	22.2 M	12.1 M
Iron	<1000 mg/kg	TM181		106000 #	59600 #	20700 #	22800 #	43000 #	93400 #
Lead	<0.7 mg/kg	TM181		142 M	13.5 M	13.1 #	3.53 M	8.16 M	29.1 M
Manganese	<0.13 mg/kg	TM181		17200 M	8780 M	6630 #	6680 M	4520 M	4630 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 #	<1.4 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		11.3 M	7.78 M	3.31 #	2.96 M	18.6 M	16 M
Selenium	<1 mg/kg	TM181		4.62 #	4.61 #	4.01 #	4.58 #	2.93 #	<1 #
Vanadium	<0.2 mg/kg	TM181		217 #	161 #	59.6 #	64.3 #	59.3 #	79 #
Zinc	<1.9 mg/kg	TM181		1270 M	92 M	88.4 #	32.8 M	49.4 M	154 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.201	1.26	3.52	1.84	0.649
Calcium	<21 mg/kg	TM224			93600	171000	193000	160000	118000
Magnesium	<8 mg/kg	TM224			14600	22600	31500	23000	16400
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0433 M	0.118 #	1.58 M	1.62 M	0.159 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-I6	4C-I7	4C-I7	4C-I8	4C-I8	3C-I4-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	3.40 - 3.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548160	18548185	18548198	18548239	18548253	18548476
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	6.9	10	6.7	13	24
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	246 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0115 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.394		0.662		
Sulphate, Total potential	<0.06 %	TM132			1.18		1.99		
Soil Organic Matter (SOM)	<0.35 %	TM132		3.26 #	6.47 #	5.14 #	3.26 #	19.5 #	0.597 #
pH	1 pH Units	TM133		12.3 M	9.86 M	10.7 M	10.5 M	10.8 M	8.93 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.28 M	7.39 M	5.68 M	5.03 M	6.83 M	14.2 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	0.149 M	<0.02 M	<0.02 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		462 M	41.5 M	207 M	32.4 M	30 M	35.1 M
Copper	<1.4 mg/kg	TM181		18.8 M	11.1 M	10.4 M	3.88 M	17.6 M	11.8 M
Iron	<1000 mg/kg	TM181		98000 #	57000 #	108000 #	28200 #	174000 #	35400 #
Lead	<0.7 mg/kg	TM181		24.4 M	45.8 M	23.2 M	10.7 M	48.2 M	24.6 M
Manganese	<0.13 mg/kg	TM181		29500 M	5450 M	19100 M	6960 M	8060 M	492 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		13.1 M	8.84 M	6.72 M	5.19 M	20.8 M	34.2 M
Selenium	<1 mg/kg	TM181		13.7 #	2.56 #	4.94 #	3.8 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		330 #	72.4 #	223 #	109 #	114 #	55.2 #
Zinc	<1.9 mg/kg	TM181		60 M	203 M	138 M	57.7 M	118 M	103 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.756		2.62		
Calcium	<21 mg/kg	TM224			179000		182000		
Magnesium	<8 mg/kg	TM224			18300		34000		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0969 M		1.1 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5-V	4C-I6-V	4C-I7-V	4C-I8-V	3C-J4	3C-J4
			Depth (m)	3.20 - 3.20	2.20 - 2.20	1.80 - 1.80	1.90 - 1.90	0.50 - 0.50	0.70 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548359	18548171	18548220	18548268	18548424	18548433
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		34	28	24	27	29	6.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		317 M	194 M	144 M	183 M	183 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0747 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0213 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.096 M
Sulphur, Total	<0.02 %	TM132							0.118
Sulphate, Total potential	<0.06 %	TM132							0.354
Soil Organic Matter (SOM)	<0.35 %	TM132		6.69 #	3.88 #	1.61 #	1.91 #	6.1 #	14.9 #
pH	1 pH Units	TM133		7.56 M	7.85 M	6.91 M	7.4 M	7.45 M	12.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		14.3 M	13.6 M	14.9 M	12.4 M	10.9 M	2.79 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		77.4 M	33.1 M	31.6 M	35.8 M	28.8 M	338 M
Copper	<1.4 mg/kg	TM181		19.1 M	15.4 M	12.6 M	17.9 M	13.9 M	2.1 M
Iron	<1000 mg/kg	TM181		32100 #	29600 #	29900 #	33500 #	26400 #	107000 #
Lead	<0.7 mg/kg	TM181		33.1 M	30.4 M	25.5 M	26.3 M	36.1 M	14.4 M
Manganese	<0.13 mg/kg	TM181		2910 M	575 M	547 M	644 M	1040 M	20900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		26.5 M	31.6 M	30.9 M	30.4 M	29.4 M	18.7 M
Selenium	<1 mg/kg	TM181		1.49 #	<1 #	<1 #	<1 #	<1 #	6.6 #
Vanadium	<0.2 mg/kg	TM181		119 #	53.3 #	57 #	55.7 #	48.5 #	371 #
Zinc	<1.9 mg/kg	TM181		132 M	113 M	107 M	136 M	178 M	83.5 M
Sulphate, acid soluble (total)	<0.02 %	TM221							0.21
Calcium	<21 mg/kg	TM224							233000
Magnesium	<8 mg/kg	TM224							45600
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243							0.0117 M

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J4	4C-J1	4C-J1	4C-J1	4C-J2	4C-J2
			Depth (m)	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548447	18548070	18548138	18548298	18548508	18548523
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5	11	8.9	16	14	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		17.7 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0105 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0116 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.175	0.401	0.323		0.309	
Sulphate, Total potential	<0.06 %	TM132		0.525	1.2	0.969		0.927	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.14 #	15.4 #	11.7 #	19.3 #	32.1 #	10.2 #
pH	1 pH Units	TM133		12.9 M	8.51 M	8.75 M	8.3 M	8.32 M	9.52 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		4.42 M	8.54 M	5.87 M	11.4 M	9.25 M	8.72 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.155 M	0.0664 M	<0.2 M	0.184 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		627 M	39.8 M	14.9 M	<9 M	40.1 M	81.7 M
Copper	<1.4 mg/kg	TM181		8.18 M	17.3 M	11.2 M	21.2 M	17.9 M	14.5 M
Iron	<1000 mg/kg	TM181		153000 #	40300 #	19500 #	217000 #	90300 #	73800 #
Lead	<0.7 mg/kg	TM181		5.03 M	60.4 M	12.5 M	28.5 M	67.1 M	62.1 M
Manganese	<0.13 mg/kg	TM181		24500 M	3950 M	4360 M	14300 M	4730 M	10500 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		1.62 M	19.1 M	6.66 M	15.7 M	15 M	13.3 M
Selenium	<1 mg/kg	TM181		8.12 #	2.66 #	3.1 #	<10 #	1.87 #	3.76 #
Vanadium	<0.2 mg/kg	TM181		499 #	49.6 #	42 #	129 #	72.9 #	124 #
Zinc	<1.9 mg/kg	TM181		28.8 M	187 M	50 M	81.8 M	258 M	248 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.232	0.785	0.603		0.443	
Calcium	<21 mg/kg	TM224		215000	114000	196000		127000	
Magnesium	<8 mg/kg	TM224		11700	17100	17500		22900	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0077 M	0.212 M	0.283 M		0.179 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-J2	4C-J3	4C-J3	4C-J3	4C-J4	4C-J4
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548515	18548532	18548543	18548551	18548079	18548087
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		15	6.5	11	9.9	8.7	5.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.339		0.196	0.181	0.317	
Sulphate, Total potential	<0.06 %	TM132		1.02		0.588	0.543	0.951	
Soil Organic Matter (SOM)	<0.35 %	TM132		12.3 #	9.79 #	59.1 #	14.9 #	2.24 #	1.65 #
pH	1 pH Units	TM133		9.96 M	9.38 M	9.08 M	9.31 M	10.7 M	11.9 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.5 M	9.31 M	9.53 M	8.6 M	7.08 M	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	3.14 M	<0.02 M	0.168 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		47.2 M	18.2 M	9.74 M	121 M	32.8 M	810 M
Copper	<1.4 mg/kg	TM181		25.7 M	43.6 M	28.8 M	15.9 M	10.2 M	18 M
Iron	<1000 mg/kg	TM181		93600 #	78600 #	70500 #	81500 #	50600 #	167000 #
Lead	<0.7 mg/kg	TM181		56.4 M	84.5 M	56.5 M	41.5 M	25.6 M	<7 M
Manganese	<0.13 mg/kg	TM181		4800 M	4880 M	3010 M	9220 M	4990 M	34400 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		35.2 M	14.3 M	19.5 M	13.6 M	9.27 M	8.79 M
Selenium	<1 mg/kg	TM181		<10 #	1.25 #	<1 #	3.55 #	3.2 #	16.5 #
Vanadium	<0.2 mg/kg	TM181		86.2 #	65.9 #	60.5 #	126 #	58.9 #	354 #
Zinc	<1.9 mg/kg	TM181		448 M	302 M	239 M	188 M	113 M	23.3 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.519		0.129	0.174	1.37	
Calcium	<21 mg/kg	TM224		118000		78700	142000	157000	
Magnesium	<8 mg/kg	TM224		15500		12600	8530	27800	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.244 M		0.0478 M	0.0259 M	1.05 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-J4	4C-J5	4C-J5	3C-J4-V	4C-J1-V	4C-J3-V
			Depth (m)	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	3.70 - 3.70	2.70 - 2.70	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548092	18548111	18548115	18548453	18548442	18548074
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	6.2	15	30	25	25
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	173 M	162 M	106 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.324		0.241			
Sulphate, Total potential	<0.06 %	TM132		0.972		0.723			
Soil Organic Matter (SOM)	<0.35 %	TM132		7.31 #	8.28 #	8.03 #	3.57 #	0.712 #	1.95 #
pH	1 pH Units	TM133		11.9 M	11.1 M	11.4 M	8.11 M	8.21 M	7.23 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	17.2 M	13.5 M	12.7 M	14.8 M	15.6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.2 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		449 M	238 M	115 M	39.6 M	27.5 M	36.4 M
Copper	<1.4 mg/kg	TM181		30.4 M	32.7 M	61.3 M	17.8 M	24.6 M	10.5 M
Iron	<1000 mg/kg	TM181		148000 #	108000 #	109000 #	30000 #	41600 #	27800 #
Lead	<0.7 mg/kg	TM181		24.3 M	47.8 M	70.9 M	30.2 M	24.3 M	27.7 M
Manganese	<0.13 mg/kg	TM181		43700 M	31700 M	14700 M	477 M	1630 M	519 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		12.9 M	22.2 M	25.1 M	29.9 M	44.9 M	38.8 M
Selenium	<1 mg/kg	TM181		18.5 #	14.4 #	<10 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		394 #	268 #	171 #	64.3 #	51.2 #	64.3 #
Zinc	<1.9 mg/kg	TM181		63.3 M	110 M	318 M	147 M	108 M	111 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.662		0.322			
Calcium	<21 mg/kg	TM224		188000		126000			
Magnesium	<8 mg/kg	TM224		7390		16900			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.107 M		0.216 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-J4-V	4C-J5-V				
			Depth (m)	2.00 - 2.00	1.70 - 1.70				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	17/10/2018	17/10/2018				
			Sample Time	00:00	00:00				
			Date Received	18/10/2018	18/10/2018				
			SDG Ref	181018-22	181018-22				
			Lab Sample No.(s)	18548098	18548120				
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		23	32				
Exchangeable Ammonia as N	<12 mg/kg	TM024		111 M	99 M				
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M				
Soil Organic Matter (SOM)	<0.35 %	TM132		1.26 #	5.24 #				
pH	1 pH Units	TM133		7.54 M	7.52 M				
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M				
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M				
Arsenic	<0.6 mg/kg	TM181		20.4 M	12.1 M				
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M				
Chromium	<0.9 mg/kg	TM181		33.8 M	49.5 M				
Copper	<1.4 mg/kg	TM181		11.4 M	17.4 M				
Iron	<1000 mg/kg	TM181		38800 #	28700 #				
Lead	<0.7 mg/kg	TM181		29.9 M	35.7 M				
Manganese	<0.13 mg/kg	TM181		995 M	1180 M				
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M				
Nickel	<0.2 mg/kg	TM181		42.6 M	29.5 M				
Selenium	<1 mg/kg	TM181		<1 #	<1 #				
Vanadium	<0.2 mg/kg	TM181		62.5 #	68.4 #				
Zinc	<1.9 mg/kg	TM181		115 M	132 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4	3C-H4	3C-H4	3C-H5	3C-H5	3C-H5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548486	18548490	18548494	18548372	18548388	18548403
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.6	135	86	91.5	92	87.5
Acenaphthene-d10 % recovery**	%	TM218		86.5	155	98	89.6	86.6	88.5
Phenanthrene-d10 % recovery**	%	TM218		82.9	158	96	91.5	83.3	87
Chrysene-d12 % recovery**	%	TM218		80.5	188	84	88.3	80.4	95
Perylene-d12 % recovery**	%	TM218		86.1	210	69	88.8	83.3	79
Naphthalene	<0.009 mg/kg	TM218		0.0358 M	418 M	1360 M	0.029 M	0.101 M	18.4 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0384 M	20.7 M	70.4 M	<0.012 M	0.0512 M	24.9 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	27.6 M	20.3 M	<0.008 M	<0.008 M	2.01 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	32.3 M	56.8 M	<0.01 M	0.0145 M	20.9 M
Phenanthrene	<0.015 mg/kg	TM218		0.133 M	109 M	214 M	0.102 M	0.152 M	152 M
Anthracene	<0.016 mg/kg	TM218		0.0323 M	32.3 M	66.6 M	<0.016 M	0.033 M	45.2 M
Fluoranthene	<0.017 mg/kg	TM218		0.265 M	101 M	274 M	0.146 M	0.26 M	289 M
Pyrene	<0.015 mg/kg	TM218		0.224 M	66.1 M	187 M	0.107 M	0.204 M	203 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.134 M	33.9 M	82.8 M	0.0805 M	0.162 M	111 M
Chrysene	<0.01 mg/kg	TM218		0.152 M	27.6 M	74.4 M	0.0871 M	0.155 M	89.7 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.242 M	36.2 M	67.6 M	0.13 M	0.285 M	96.3 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.075 M	9.93 M	32.6 M	0.0397 M	0.0994 M	45.5 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.2 M	24.9 M	59.9 M	0.0825 M	0.214 M	92.3 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.141 M	14.5 M	50.2 M	0.0443 M	0.199 M	51.1 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0359 M	<11.5 M	6.73 M	<0.023 M	0.0489 M	16.5 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.199 M	15.8 M	39.3 M	0.0729 M	0.261 M	66.2 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.91	970	2660	0.921	2.24	1320

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4-V	3C-H5-V	3C-I4	3C-I4	3C-I4	3C-I5
			Depth (m)	2.70 - 2.70	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548501	18548415	18548458	18548465	18548469	18548282
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.1	90.6	83.5	93.6	79	94.1
Acenaphthene-d10 % recovery**	%	TM218		82.2	90.2	85	92.3	82.9	94.3
Phenanthrene-d10 % recovery**	%	TM218		88.2	91.6	90.3	89.3	85.8	96.3
Chrysene-d12 % recovery**	%	TM218		88.8	91.5	88.8	83.7	81.7	101
Perylene-d12 % recovery**	%	TM218		86.9	88.1	85.6	75.7	77.6	98.7
Naphthalene	<0.009 mg/kg	TM218		0.518 M	0.474 M	<0.009 M	0.474 M	0.091 M	0.262 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0482 M	0.483 M	<0.012 M	0.0472 M	0.0174 M	0.288 M
Acenaphthene	<0.008 mg/kg	TM218		0.0356 M	0.0187 M	<0.008 M	0.0239 M	0.0194 M	0.0116 M
Fluorene	<0.01 mg/kg	TM218		0.0718 M	0.0594 M	<0.01 M	0.0911 M	0.0221 M	0.0376 M
Phenanthrene	<0.015 mg/kg	TM218		0.312 M	0.537 M	0.0252 M	0.949 M	0.516 M	0.367 M
Anthracene	<0.016 mg/kg	TM218		0.0718 M	0.243 M	<0.016 M	0.106 M	0.0553 M	0.148 M
Fluoranthene	<0.017 mg/kg	TM218		0.363 M	1.57 M	0.0634 M	0.708 M	0.678 M	1.05 M
Pyrene	<0.015 mg/kg	TM218		0.226 M	1.31 M	0.0492 M	0.528 M	0.533 M	0.855 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.136 M	1.11 M	0.0312 M	0.312 M	0.286 M	0.816 M
Chrysene	<0.01 mg/kg	TM218		0.107 M	1.04 M	0.0309 M	0.405 M	0.381 M	0.716 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.116 M	1.56 M	0.0292 M	0.385 M	0.307 M	1.11 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0475 M	0.73 M	<0.014 M	0.119 M	0.124 M	0.454 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.103 M	1.54 M	0.0309 M	0.238 M	0.222 M	1.04 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.101 M	1.45 M	0.0312 M	0.135 M	0.267 M	0.928 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.323 M	<0.023 M	0.0482 M	0.0397 M	0.213 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0759 M	1.73 M	<0.024 M	0.171 M	0.18 M	1.12 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2.33	14.2	0.291	4.74	3.74	9.42

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5	3C-I5	3C-I5	4C-I5	4C-I5	4C-I6
			Depth (m)	0.80 - 0.80	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548317	18548332	18548346	18548126	18548131	18548150
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.3	92.4	92.2	95.1	94.5	94.9
Acenaphthene-d10 % recovery**	%	TM218		84.3	89.4	87.5	95.5	96.6	94.5
Phenanthrene-d10 % recovery**	%	TM218		88.1	89.6	83.8	99.2	97.8	99.3
Chrysene-d12 % recovery**	%	TM218		88.1	78.2	74.9	98	95.3	95.3
Perylene-d12 % recovery**	%	TM218		84.7	70.4	74.6	92.5	91.4	88.1
Naphthalene	<0.009 mg/kg	TM218		0.847 M	8.43 M	0.498 #	0.0173 M	<0.045 M	0.106 M
Acenaphthylene	<0.012 mg/kg	TM218		0.225 M	1.09 M	0.143 #	<0.012 M	<0.06 M	0.0238 M
Acenaphthene	<0.008 mg/kg	TM218		0.0196 M	0.067 M	0.0171 #	<0.008 M	<0.04 M	0.0174 M
Fluorene	<0.01 mg/kg	TM218		0.111 M	0.791 M	0.0954 #	<0.01 M	<0.05 M	0.0194 M
Phenanthrene	<0.015 mg/kg	TM218		0.736 M	5.61 M	0.922 #	0.0439 M	<0.075 M	0.385 M
Anthracene	<0.016 mg/kg	TM218		0.191 M	1.05 M	0.284 #	<0.016 M	<0.08 M	0.0656 M
Fluoranthene	<0.017 mg/kg	TM218		1.24 M	6.28 M	2.02 #	0.0827 M	0.146 M	0.502 M
Pyrene	<0.015 mg/kg	TM218		0.946 M	4.19 M	1.52 #	0.0697 M	0.148 M	0.423 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.667 M	2.08 M	0.908 #	0.0498 M	0.0879 M	0.269 M
Chrysene	<0.01 mg/kg	TM218		0.599 M	1.82 M	0.792 #	0.0504 M	0.126 M	0.286 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.877 M	2.55 M	1.04 #	0.0782 M	0.0935 M	0.446 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.309 M	0.831 M	0.361 #	0.0275 M	<0.07 M	0.141 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.723 M	1.46 M	0.832 #	0.0495 M	0.0989 M	0.333 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.88 M	1.25 M	0.549 #	0.0333 M	<0.09 M	0.173 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.129 M	0.248 M	0.152 #	<0.023 M	<0.115 M	0.0591 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.654 M	0.787 M	0.716 #	0.0518 M	<0.12 M	0.26 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		9.16	38.5	10.9	0.554	0.7	3.51

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-I6	4C-I7	4C-I7	4C-I8	4C-I8	3C-I4-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	3.40 - 3.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548160	18548185	18548198	18548239	18548253	18548476
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91	92.4	83.2	89.4	92.2	93.9
Acenaphthene-d10 % recovery**	%	TM218		92.2	96.7	85.6	86.4	92.2	91
Phenanthrene-d10 % recovery**	%	TM218		95	99.8	93.4	91	95.1	89.3
Chrysene-d12 % recovery**	%	TM218		91.3	97.8	91.9	84.9	97.2	88.4
Perylene-d12 % recovery**	%	TM218		86	89	88.9	80.4	89.2	92.4
Naphthalene	<0.009 mg/kg	TM218		0.114 M	0.459 M	0.167 M	0.305 M	0.907 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0201 M	0.145 M	0.0755 M	<0.12 M	0.134 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0427 M	0.043 M	0.0282 M	0.0943 M	0.403 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0295 M	0.166 M	0.058 M	<0.1 M	0.328 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.56 M	1.01 M	0.545 M	0.439 M	1.73 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.0932 M	0.225 M	0.123 M	0.178 M	0.358 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		1 M	1.26 M	0.784 M	0.339 M	2.85 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.908 M	1.42 M	0.833 M	0.292 M	2.55 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.571 M	0.766 M	0.488 M	<0.14 M	2.47 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.582 M	0.729 M	0.459 M	<0.1 M	2.11 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.779 M	0.864 M	0.682 M	<0.15 M	2.75 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.335 M	0.3 M	0.23 M	<0.14 M	0.844 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.747 M	0.604 M	0.52 M	<0.15 M	2.6 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.388 M	0.443 M	0.566 M	<0.18 M	1.46 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.123 M	0.125 M	0.074 M	<0.23 M	0.423 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.55 M	0.526 M	0.404 M	<0.24 M	1.78 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		6.84	9.09	6.04	1.65	23.7	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5-V	4C-I6-V	4C-I7-V	4C-I8-V	3C-J4	3C-J4
			Depth (m)	3.20 - 3.20	2.20 - 2.20	1.80 - 1.80	1.90 - 1.90	0.50 - 0.50	0.70 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548359	18548171	18548220	18548268	18548424	18548433
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.8	91.2	90.3	84.1	94.9	94.7
Acenaphthene-d10 % recovery**	%	TM218		95.1	90.5	91.1	82.1	95.4	95
Phenanthrene-d10 % recovery**	%	TM218		96.5	94.1	91.1	85.5	94.8	97.3
Chrysene-d12 % recovery**	%	TM218		102	96	90.5	82.8	100	98.2
Perylene-d12 % recovery**	%	TM218		100	96.5	91.1	82.3	97.9	86.8
Naphthalene	<0.009 mg/kg	TM218		0.0336 M	0.0145 M	<0.009 M	<0.009 M	0.0451 M	2.08 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	3.64 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	0.129 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	1.77 M
Phenanthrene	<0.015 mg/kg	TM218		0.101 M	0.0264 M	<0.015 M	<0.015 M	0.0961 M	11.3 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M	4.98 M
Fluoranthene	<0.017 mg/kg	TM218		0.173 M	0.0389 M	<0.017 M	<0.017 M	0.138 M	35.3 M
Pyrene	<0.015 mg/kg	TM218		0.159 M	0.0314 M	<0.015 M	<0.015 M	0.0985 M	25.2 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.112 M	0.0225 M	<0.014 M	<0.014 M	0.0747 M	15.7 M
Chrysene	<0.01 mg/kg	TM218		0.135 M	0.0221 M	0.019 M	<0.01 M	0.0754 M	11.3 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.15 M	0.0321 M	0.0211 M	<0.015 M	0.101 M	17 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.059 M	<0.014 M	<0.014 M	<0.014 M	0.0308 M	5.96 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.136 M	0.0222 M	0.023 M	<0.015 M	0.0651 M	13.7 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0785 M	<0.018 M	<0.018 M	<0.018 M	0.049 M	6.8 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	2.56 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0978 M	<0.024 M	<0.024 M	<0.024 M	0.0575 M	8.3 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.23	0.21	<0.118	<0.118	0.831	166

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J4	4C-J1	4C-J1	4C-J1	4C-J2	4C-J2
			Depth (m)	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548447	18548070	18548138	18548298	18548508	18548523
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.6	96.2	83.3	93	93.9	80.7
Acenaphthene-d10 % recovery**	%	TM218		89.8	95.5	84.9	92.9	93.4	82.3
Phenanthrene-d10 % recovery**	%	TM218		89.3	94.6	90.6	95.2	95.4	88.5
Chrysene-d12 % recovery**	%	TM218		94.1	96.7	83.1	98.7	97.6	83.7
Perylene-d12 % recovery**	%	TM218		98.6	91.4	81.1	94.6	94.1	76.9
Naphthalene	<0.009 mg/kg	TM218		0.0671 M	0.463 M	0.0918 M	0.348 M	0.446 M	0.297 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0152 M	0.205 M	0.0265 M	0.142 M	0.291 M	0.101 M
Acenaphthene	<0.008 mg/kg	TM218		0.0928 M	0.0395 M	0.0153 M	0.485 M	0.0587 M	0.0335 M
Fluorene	<0.01 mg/kg	TM218		0.0549 M	0.123 M	0.0315 M	0.358 M	0.24 M	0.0625 M
Phenanthrene	<0.015 mg/kg	TM218		1.14 M	1.31 M	0.366 M	0.87 M	1.8 M	0.534 M
Anthracene	<0.016 mg/kg	TM218		0.142 M	0.352 M	0.0777 M	0.158 M	0.469 M	0.15 M
Fluoranthene	<0.017 mg/kg	TM218		1.85 M	2.87 M	0.618 M	0.685 M	3.27 M	1.5 M
Pyrene	<0.015 mg/kg	TM218		1.76 M	2.21 M	0.495 M	0.478 M	2.61 M	1.35 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.25 M	1.55 M	0.418 M	0.37 M	1.87 M	0.851 M
Chrysene	<0.01 mg/kg	TM218		1.59 M	1.39 M	0.398 M	0.323 M	1.5 M	0.793 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.7 M	2.02 M	0.56 M	0.446 M	1.99 M	1.22 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.513 M	0.728 M	0.188 M	0.128 M	0.651 M	0.389 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.981 M	1.32 M	0.426 M	0.33 M	1.66 M	0.904 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.577 M	0.846 M	0.446 M	0.211 M	1.06 M	0.967 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.189 M	0.236 M	0.0825 M	0.0748 M	0.306 M	0.135 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.755 M	0.96 M	0.366 M	0.255 M	1.15 M	0.641 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		12.7	16.6	4.6	5.66	19.4	9.92

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-J2	4C-J3	4C-J3	4C-J3	4C-J4	4C-J4
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548515	18548532	18548543	18548551	18548079	18548087
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.4	95.4	94	81	82	80.6
Acenaphthene-d10 % recovery**	%	TM218		85.7	94	91.2	83.6	84.2	84.2
Phenanthrene-d10 % recovery**	%	TM218		89.8	94.4	90.4	87.2	85.1	90.2
Chrysene-d12 % recovery**	%	TM218		82.5	95.1	86.9	85.1	79	85.4
Perylene-d12 % recovery**	%	TM218		85.5	87.9	79.3	73	79.3	79.6
Naphthalene	<0.009 mg/kg	TM218		0.198 M	0.291 M	0.221 M	0.116 M	0.0522 M	0.122 M
Acenaphthylene	<0.012 mg/kg	TM218		0.137 M	0.132 M	0.138 M	0.273 M	<0.06 M	0.0203 M
Acenaphthene	<0.008 mg/kg	TM218		0.0276 M	0.0157 M	0.0214 M	0.0161 M	<0.04 M	0.0168 M
Fluorene	<0.01 mg/kg	TM218		0.111 M	0.0616 M	0.0776 M	0.175 M	<0.05 M	0.0279 M
Phenanthrene	<0.015 mg/kg	TM218		0.999 M	0.724 M	0.906 M	2.36 M	0.282 M	0.93 M
Anthracene	<0.016 mg/kg	TM218		0.219 M	0.196 M	0.195 M	0.409 M	0.118 M	0.193 M
Fluoranthene	<0.017 mg/kg	TM218		1.75 M	1.31 M	1.55 M	3.82 M	0.692 M	2.52 M
Pyrene	<0.015 mg/kg	TM218		1.28 M	1 M	1.17 M	2.83 M	0.589 M	1.86 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.792 M	0.672 M	0.719 M	1.37 M	0.329 M	1.82 M
Chrysene	<0.01 mg/kg	TM218		0.75 M	0.581 M	0.695 M	1.26 M	0.313 M	1.69 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.783 M	0.755 M	1.06 M	1.48 M	0.313 M	2.61 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.332 M	0.283 M	0.349 M	0.53 M	0.122 M	0.798 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.69 M	0.559 M	0.702 M	1.18 M	0.271 M	1.79 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.645 M	0.378 M	0.487 M	1.08 M	0.224 M	1.8 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.107 M	0.104 M	0.126 M	0.159 M	<0.115 M	0.325 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.469 M	0.436 M	0.552 M	0.832 M	0.197 M	1.37 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		9.29	7.5	8.97	17.9	3.5	17.9

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-J4	4C-J5	4C-J5	3C-J4-V	4C-J1-V	4C-J3-V
			Depth (m)	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	3.70 - 3.70	2.70 - 2.70	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548092	18548111	18548115	18548453	18548442	18548074
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.9	90	94.3	80.2	83.2	94.9
Acenaphthene-d10 % recovery**	%	TM218		93.7	87.2	94.6	83	86.9	94
Phenanthrene-d10 % recovery**	%	TM218		93.4	94.1	96.9	89.4	94.6	95.3
Chrysene-d12 % recovery**	%	TM218		98.1	89.7	96.6	87.7	92.6	102
Perylene-d12 % recovery**	%	TM218		96	82.6	94.9	84.7	86.9	102
Naphthalene	<0.009 mg/kg	TM218		0.123 M	0.139 M	0.0748 M	0.0207 M	0.145 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0877 M	0.0258 M	<0.012 M	0.132 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0145 M	<0.04 M	<0.008 M	<0.008 M	0.698 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0239 M	<0.05 M	<0.01 M	<0.01 M	0.405 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.544 M	0.465 M	0.221 M	<0.015 M	0.948 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.128 M	0.102 M	0.0427 M	<0.016 M	0.135 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		1.27 M	0.906 M	0.41 M	<0.017 M	0.213 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.908 M	0.807 M	0.637 M	<0.015 M	0.139 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.83 M	0.492 M	0.472 M	<0.014 M	0.0269 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.855 M	0.556 M	0.439 M	<0.01 M	0.0236 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.989 M	0.619 M	0.523 M	<0.015 M	0.0205 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.366 M	0.278 M	0.218 M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.752 M	0.53 M	0.486 M	<0.015 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.517 M	0.314 M	0.278 M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.157 M	<0.115 M	0.0896 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.602 M	0.457 M	0.405 M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		8.08	5.75	4.32	<0.118	2.89	<0.118

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-J4-V	4C-J5-V				
			Depth (m)	2.00 - 2.00	1.70 - 1.70				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	17/10/2018	17/10/2018				
			Sample Time	00:00	00:00				
			Date Received	18/10/2018	18/10/2018				
			SDG Ref	181018-22	181018-22				
			Lab Sample No.(s)	18548098	18548120				
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.4	87.7				
Acenaphthene-d10 % recovery**	%	TM218		95.3	88.2				
Phenanthrene-d10 % recovery**	%	TM218		94.9	94.1				
Chrysene-d12 % recovery**	%	TM218		100	92.1				
Perylene-d12 % recovery**	%	TM218		99.8	88.8				
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M				
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M				
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M				
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M				
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M				
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	<0.017 M				
Pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M				
Chrysene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M				
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M				
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M				
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M				
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M				
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M				
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	<0.118				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4	3C-H4	3C-H4	3C-H5	3C-H5	3C-H5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548486	18548490	18548494	18548372	18548388	18548403
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		91	98	110 2	112	82.4	44.1
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	186 M	67.4 2 M	<0.1 M	<0.1 M	0.557 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	0.303	<0.2 2	<0.01	<0.01	0.023
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	1.62	0.775 2	<0.01	<0.01	0.0771
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	2.94	1.26 2	<0.01	<0.01	0.069
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	108	38.5 2	<0.01	<0.01	0.161
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	14.8	16.5	<0.1	<0.1	8.96
Aliphatics >C16-C21	<0.1 mg/kg	TM173		0.407	120	96.4	<0.1	3.36	92.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		8.23	152	212	6.31	51.7	109
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.11	33.4	91.3	<0.1	5.84	29.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		9.75	321	416	6.31	60.9	240
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.2	<0.2 2	<0.01	<0.01	0.0426
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.2	<0.2 2	<0.01	<0.01	0.0322
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	1.96	0.839 2	<0.01	<0.01	0.046
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	71.7	25.7 2	<0.01	<0.01	0.107
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	509	542	<0.1	<0.1	63.6
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	1350	1570	1.82	0.384	499
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		15.3	2090	2240	20.3	7.9	1530
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.16	477	522	10	<0.1	444
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	126	142	4.46	<0.1	116
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		16.4	4420	4870	32.1	8.29	2540
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		26.2	4930	5360	38.4	69.2	2780

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4-V	3C-H5-V	3C-I4	3C-I4	3C-I4	3C-I5
			Depth (m)	2.70 - 2.70	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548501	18548415	18548458	18548465	18548469	18548282
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		94	83	126	12.5	65	75
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.288 M	<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0181	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0155	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.143	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.206	1.11	<0.1	7.21	2.1	0.787
Aliphatics >C16-C21	<0.1 mg/kg	TM173		0.868	15.7	<0.1	13.4	10.8	11.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		5.67	79	5.69	68.1	56.7	76.8
Aliphatics >C35-C44	<0.1 mg/kg	TM173		0.935	21.9	<0.1	6.44	11.1	27.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		7.68	118	5.69	95.2	80.6	116
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0103	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0955	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	2.92	<0.1	16.4	0.182	2.03
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.369	21.9	1.28	23.2	4.8	11.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		6.57	112	25.5	53.7	18.6	93.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		3.53	47.1	7.38	12.3	1	56.3
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		1.15	15.9	2.53	3.51	<0.1	20.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		10.5	184	34.1	106	24.6	164
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		18.4	302	39.8	201	105	280

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5	3C-I5	3C-I5	4C-I5	4C-I5	4C-I6
			Depth (m)	0.80 - 0.80	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548317	18548332	18548346	18548126	18548131	18548150
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		13.9	4.5	25.8	87	96	59
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	<0.1 #	<0.1 #	<0.1 M	<0.1 M	<0.1 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	0.0417	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	0.0176	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	0.0143	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.33	17.8	2.65	<0.1	<0.1	2.54
Aliphatics >C16-C21	<0.1 mg/kg	TM173		10	27.4	14	2.1	4.18	11.4
Aliphatics >C21-C35	<0.1 mg/kg	TM173		77	69.8	13.1	30.9	28.9	110
Aliphatics >C35-C44	<0.1 mg/kg	TM173		12.6	7.15	1.3	33.9	8.43	38.2
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		102	122	31.1	66.9	41.5	162
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	0.0121	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.165	19.6	6.1	<0.1	0.198	2.76
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.58	42.4	88.3	2.16	1.92	8.29
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		19	79.6	167	29.9	19	60.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.73	20.7	41	42.5	9.94	39.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	6.69	12.5	20.2	3.55	16.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		24.5	162	302	74.5	31.1	110
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		126	284	333	141	72.5	273

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-I6	4C-I7	4C-I7	4C-I8	4C-I8	3C-I4-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	3.40 - 3.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548160	18548185	18548198	18548239	18548253	18548476
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		87	42.3	74.4	76	57.7	100
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.1 M	0.425 M	0.535 #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0129	0.0138	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0247	0.0357	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0418	0.0575	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	0.0236	<0.01	0.19	0.208	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		11.5	41	12	4.4	38.2	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		27	116	59	9.62	157	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		85.1	821	388	109	915	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		26.2	226	98.3	129	258	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		150	1210	557	252	1370	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0253	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0173	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	0.0279	0.038	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	0.015	<0.01	0.126	0.139	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.35	15.8	6.8	11.1	15.9	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		15.7	53.7	31.9	15.1	72.5	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		77.6	252	165	146	356	2.45
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		37.4	103	78	210	137	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		14.9	40.3	31.4	93.7	50.7	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		134	424	282	382	581	2.45
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		284	1630	839	634	1950	2.45

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5-V	4C-I6-V	4C-I7-V	4C-I8-V	3C-J4	3C-J4
			Depth (m)	3.20 - 3.20	2.20 - 2.20	1.80 - 1.80	1.90 - 1.90	0.50 - 0.50	0.70 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548359	18548171	18548220	18548268	18548424	18548433
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		18.3	92	101	97	77	16
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	0.165 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0149
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0352
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0113	0.0277
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	0.0138	<0.01	<0.01	0.0127	0.0363
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	7.7
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	24.5
Aliphatics >C21-C35	<0.1 mg/kg	TM173		4.38	5.78	3.64	2.95	8.7	71.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	7.52
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		4.38	5.78	3.64	2.95	8.7	111
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0181
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	0.0245
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	0.815	17.8
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	1.97	<0.1	0.332	2.13	104
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		26.6	38.5	9.17	16	35.8	279
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		3.34	7.74	3.64	3.99	6.33	63.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	2.6	1.28	0.802	1.99	18.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		30	48.2	12.8	20.3	45.1	465
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		34.4	54	16.4	23.3	53.8	577

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J4	4C-J1	4C-J1	4C-J1	4C-J2	4C-J2
			Depth (m)	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548447	18548070	18548138	18548298	18548508	18548523
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		108	46	45	94	57	50
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.1 #	<0.1 M	<0.1 #	<0.1 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.4	3.35	4.65	4.31	4.25	2.46
Aliphatics >C16-C21	<0.1 mg/kg	TM173		17.9	19.5	32.6	86.9	10.7	9.21
Aliphatics >C21-C35	<0.1 mg/kg	TM173		106	91.8	134	80.6	45.4	30.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		27.3	25.4	23.5	3.84	12.6	12
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		154	140	194	176	72.9	54.4
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.78	4.88	2.42	6.68	0.583	2.3
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		18.8	21.2	13.1	57.4	7	10.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		83.9	90.9	85.1	80.4	30.3	53.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		26.4	35.4	39	18.7	2.97	28.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		9.21	13.4	16	7.33	<0.1	12.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		131	152	140	163	40.9	94.6
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		285	292	334	339	114	149

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-J2	4C-J3	4C-J3	4C-J3	4C-J4	4C-J4
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548515	18548532	18548543	18548551	18548079	18548087
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		75	58	54	62	91.8	79
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.1 #	<0.1 #	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0263	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.22	0.685	1.45	1.16	9.48	2.27
Aliphatics >C16-C21	<0.1 mg/kg	TM173		15.5	4.74	5.54	8.23	21.6	8.96
Aliphatics >C21-C35	<0.1 mg/kg	TM173		39.2	27.1	24.8	22.8	55.1	26.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		13.7	12.1	5.51	2.27	29.2	6.27
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		70.7	44.5	37.3	34.5	115	44.2
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0175	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	3.95	2.27	2.16	1.46
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		5.42	4.23	47.2	13.3	7.15	13.6
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		15.4	10.7	114	43	37.6	68.8
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.61	1.21	31.3	13.5	35.4	20.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	11.4	5.38	16.3	7.31
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		22.4	16.1	197	72.2	82.3	104
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		93.1	60.7	234	107	198	149

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-J4	4C-J5	4C-J5	3C-J4-V	4C-J1-V	4C-J3-V
			Depth (m)	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	3.70 - 3.70	2.70 - 2.70	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548092	18548111	18548115	18548453	18548442	18548074
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		100	65	68	88	77	92
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.1 #	<0.1 M	4.28 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.0333	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.142	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.662	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	1.8	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	1.75	<0.1	<0.1	9.35	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		7.83	9.72	5.82	<0.1	167	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		41.1	77.1	43.8	2.3	90.9	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		9.38	42.1	14.7	0.985	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		58.3	131	64.3	3.28	267	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	0.442	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	1.2	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.15	1.62	2.52	<0.1	14.2	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.86	9.71	11.7	<0.1	126	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		46.7	70.7	63.4	7.8	78.2	0.454
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		17.2	53.4	46.5	3.83	1.93	0.858
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		6.88	22.7	20.1	1.58	1.13	0.496
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		74.9	135	124	11.6	220	1.31
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		133	266	188	14.9	491	1.31

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-J4-V	4C-J5-V				
			Depth (m)	2.00 - 2.00	1.70 - 1.70				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	17/10/2018	17/10/2018				
			Sample Time	00:00	00:00				
			Date Received	18/10/2018	18/10/2018				
			SDG Ref	181018-22	181018-22				
			Lab Sample No.(s)	18548098	18548120				
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		106	107				
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M				
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1				
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1				
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	5.29				
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	5.29				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	<0.1				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		1.57	19.8				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	7.45				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	2.42				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		1.57	27.3				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1.57	32.5				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4	3C-H4	3C-H4	3C-H5	3C-H5	3C-H5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548486	18548490	18548494	18548372	18548388	18548403
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	94.5	86 2	105	102	88.5
Toluene-d8**	%	TM116		98.3	96.9	92.8 2	98.5	98.7	89.6
4-Bromofluorobenzene**	%	TM116		94.9	88.7	82.5 2	99.7	95.6	73.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.01 2 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.009 2 M	<0.09 M	<0.09 M	0.114 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	0.12 M	0.0284 2 M	<0.07 M	<0.07 M	0.146 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.004 2 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	0.144 #	0.0519 2 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.01 2 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	579 M	411 2 M	<0.13 M	<0.13 M	8.18 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	- 2	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-H4-V	3C-H5-V	3C-I4	3C-I4	3C-I4	3C-I5
			Depth (m)	2.70 - 2.70	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548501	18548415	18548458	18548465	18548469	18548282
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	99.6	108	101	89.4	102
Toluene-d8**	%	TM116		100	97.9	97.7	98.7	90.9	99.1
4-Bromofluorobenzene**	%	TM116		99.8	95.7	95.8	102	81.1	93
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<2 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<1.8 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<1.4 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.8 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<2 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<2 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		1.57 M	<0.26 M	<0.26 M	<2.6 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<8	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5	3C-I5	3C-I5	4C-I5	4C-I5	4C-I6
			Depth (m)	0.80 - 0.80	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548317	18548332	18548346	18548126	18548131	18548150
			AGS Reference						
Dibromofluoromethane**	%	TM116		94	99.1	88.8	114	105	96.5
Toluene-d8**	%	TM116		92.8	98.6	91.1	91.3	97.3	92.8
4-Bromofluorobenzene**	%	TM116		75.9	95.8	70.9	98.6	99.8	85.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<2 M	<0.2 #	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<1.8 M	<0.18 #	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<1.4 M	<0.14 #	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.8 M	<0.08 #	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<2 #	<0.2 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<2 M	<0.2 #	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	4.59 M	0.327 #	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<8	<0.8	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-I6	4C-I7	4C-I7	4C-I8	4C-I8	3C-I4-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	3.40 - 3.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548160	18548185	18548198	18548239	18548253	18548476
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	109	103	107	111	105
Toluene-d8**	%	TM116		97.4	97.7	93.1	92.7	97.3	99.4
4-Bromofluorobenzene**	%	TM116		96	90.4	97.1	99.8	90	100
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	-	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-I5-V	4C-I6-V	4C-I7-V	4C-I8-V	3C-J4	3C-J4
			Depth (m)	3.20 - 3.20	2.20 - 2.20	1.80 - 1.80	1.90 - 1.90	0.50 - 0.50	0.70 - 1.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548359	18548171	18548220	18548268	18548424	18548433
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.9	107	115	105	104	81.9
Toluene-d8**	%	TM116		93	92.4	99.9	97.9	98.3	87.4
4-Bromofluorobenzene**	%	TM116		82.8	95.4	104	95.8	94.7	64.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.2 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.18 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.14 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.08 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.2 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.2 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.26 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.8

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J4	4C-J1	4C-J1	4C-J1	4C-J2	4C-J2
			Depth (m)	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548447	18548070	18548138	18548298	18548508	18548523
			AGS Reference						
Dibromofluoromethane**	%	TM116		101	92.2	90.4	102	91.8	101
Toluene-d8**	%	TM116		100	89.8	95.2	96.4	91.7	94.1
4-Bromofluorobenzene**	%	TM116		102	80.3	89.5	98.5	86.9	87.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.2 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.18 #	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.14 #	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.08 #	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.2 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.2 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.26 #	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.8	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-J2	4C-J3	4C-J3	4C-J3	4C-J4	4C-J4
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548515	18548532	18548543	18548551	18548079	18548087
			AGS Reference						
Dibromofluoromethane**	%	TM116		98	103	97.1	97.5	108	105
Toluene-d8**	%	TM116		95	96.1	92.9	95.5	95.9	97.4
4-Bromofluorobenzene**	%	TM116		88.6	94.9	89.8	83.7	97	92.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 ♦ M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 ♦ M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 ♦ M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	-	<0.4	-	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-J4	4C-J5	4C-J5	3C-J4-V	4C-J1-V	4C-J3-V
			Depth (m)	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	3.70 - 3.70	2.70 - 2.70	1.90 - 1.90
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018	17/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			SDG Ref	181018-22	181018-22	181018-22	181018-22	181018-22	181018-22
			Lab Sample No.(s)	18548092	18548111	18548115	18548453	18548442	18548074
			AGS Reference						
Dibromofluoromethane**	%	TM116		112	102	101	104	107	108
Toluene-d8**	%	TM116		101	92.5	91.3	99.6	94.3	99.6
4-Bromofluorobenzene**	%	TM116		102	84.3	88.3	99.9	95	98.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	0.194 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	0.56 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-J4-V	4C-J5-V				
			Depth (m)	2.00 - 2.00	1.70 - 1.70				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	17/10/2018	17/10/2018				
			Sample Time	00:00	00:00				
			Date Received	18/10/2018	18/10/2018				
			SDG Ref	181018-22	181018-22				
			Lab Sample No.(s)	18548098	18548120				
			AGS Reference						
Dibromofluoromethane**	%	TM116		116	109				
Toluene-d8**	%	TM116		101	96.8				
4-Bromofluorobenzene**	%	TM116		103	98.8				
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M				
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M				
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M				
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #				
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M				
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M				
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4				

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-H4 0.50 - 0.50 SOLID 17/10/2018 00:00:00 20/10/2018 15:47:18 181018-22 18548486 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-H4 2.00 - 2.00 SOLID 17/10/2018 00:00:00 19/10/2018 11:43:50 181018-22 18548494 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-H5 0.30 - 0.30 SOLID 17/10/2018 00:00:00 19/10/2018 06:40:13 181018-22 18548372 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-H5 1.50 - 1.50 SOLID 17/10/2018 00:00:00 20/10/2018 15:51:54 181018-22 18548403 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I4 0.50 - 0.50 SOLID 17/10/2018 00:00:00 20/10/2018 15:49:17 181018-22 18548458 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I4 1.00 - 1.00 SOLID 17/10/2018 00:00:00 19/10/2018 11:40:17 181018-22 18548465 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181018-22 **Client Reference:** **Report Number:** 481508
Location: Llanwern **Order Number:** LLA491 **Superseded Report:** 481496

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I5 0.30 - 0.30 SOLID 17/10/2018 00:00:00 19/10/2018 09:45:47 181018-22 18548282 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I5 1.50 - 1.50 SOLID 17/10/2018 00:00:00 19/10/2018 07:54:18 181018-22 18548332 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I5 2.00 - 2.00 SOLID 17/10/2018 00:00:00 19/10/2018 06:36:42 181018-22 18548346 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I5 0.50 - 0.50 SOLID 17/10/2018 00:00:00 20/10/2018 15:40:33 181018-22 18548126 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I5 1.00 - 1.00 SOLID 17/10/2018 00:00:00 18/10/2018 17:06:23 181018-22 18548131 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I6 0.50 - 0.50 SOLID 17/10/2018 00:00:00 18/10/2018 17:07:59 181018-22 18548150 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181018-22 **Client Reference:** **Report Number:** 481508
Location: Llanwern **Order Number:** LLA491 **Superseded Report:** 481496

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I7 0.50 - 0.50 SOLID 17/10/2018 00:00:00 19/10/2018 06:43:58 181018-22 18548185 TM048	29/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-I8 0.50 - 0.50 SOLID 17/10/2018 00:00:00 20/10/2018 14:12:11 181018-22 18548239 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-J4 0.70 - 1.30 SOLID 17/10/2018 00:00:00 20/10/2018 15:53:37 181018-22 18548433 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-J4 1.80 - 1.80 SOLID 17/10/2018 00:00:00 20/10/2018 15:55:35 181018-22 18548447 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J1 0.50 - 0.50 SOLID 17/10/2018 00:00:00 20/10/2018 15:42:21 181018-22 18548070 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J1 1.00 - 1.00 SOLID 17/10/2018 00:00:00 20/10/2018 14:21:00 181018-22 18548138 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181018-22 **Client Reference:** **Report Number:** 481508
Location: Llanwern **Order Number:** LLA491 **Superseded Report:** 481496

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J2 0.50 - 0.50 SOLID 17/10/2018 00:00:00 20/10/2018 14:23:08 181018-22 18548508 TM048	29/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J2 2.00 - 2.00 SOLID 17/10/2018 00:00:00 20/10/2018 14:25:12 181018-22 18548515 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J3 1.00 - 1.00 SOLID 17/10/2018 00:00:00 20/10/2018 14:17:06 181018-22 18548543 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J3 1.50 - 1.50 SOLID 17/10/2018 00:00:00 20/10/2018 14:13:47 181018-22 18548551 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J4 0.50 - 0.50 SOLID 17/10/2018 00:00:00 20/10/2018 14:15:51 181018-22 18548079 TM048	29/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J4 1.40 - 1.40 SOLID 17/10/2018 00:00:00 20/10/2018 09:55:58 181018-22 18548092 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-J5 1.00 - 1.00 SOLID 17/10/2018 00:00:00 20/10/2018 15:44:49 181018-22 18548115 TM048	24/10/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548070
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	7.08	<0.2	70.8	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00516	<0.0005	0.0516	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00285	<0.0003	0.0285	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00066	<0.0004	0.0066	<0.004	-	-	-
Selenium	0.00199	<0.001	0.0199	<0.01	-	-	-
Vanadium	0.0506	<0.001	0.506	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000482	<0.00001	0.000482	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Fluoranthene by GCMS	0.000138	<0.000005	0.00138	<0.00005	-	-	-
Anthracene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000715	<0.000005	0.000715	<0.00005	-	-	-
Fluorene by GCMS	0.00000903	<0.000005	0.0000903	<0.00005	-	-	-
Chrysene by GCMS	0.0000934	<0.000005	0.000934	<0.00005	-	-	-
Pyrene by GCMS	0.000118	<0.000005	0.00118	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000561	<0.000005	0.000561	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000457	<0.000005	0.000457	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000588	<0.000002	0.000588	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000564	<0.000005	0.000564	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000488	<0.000005	0.000488	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000934	<0.000082	0.00934	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.16
Conductivity (µS/cm)	237.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

16/11/2018 16:48:06

16:47:22 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548070
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.16
Conductivity (µS/cm)	237.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548079
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000132	<0.00001	0.000132	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000552	<0.0005	0.00552	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00149	<0.001	0.0149	<0.01	-	-	-
Copper	0.00164	<0.0003	0.0164	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00191	<0.001	0.0191	<0.01	-	-	-
Vanadium	0.0481	<0.001	0.481	<0.01	-	-	-
Zinc	0.00144	<0.001	0.0144	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000539	<0.00001	0.000539	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000792	<0.000005	0.000792	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000625	<0.000005	0.000625	<0.00005	-	-	-
Fluorene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000118	<0.000005	0.00118	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000345	<0.000082	0.00345	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	689.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548079
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.95
Conductivity (µS/cm)	689.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.5
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548087
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00295	<0.001	0.0295	<0.01	-	-	-
Copper	0.00155	<0.0003	0.0155	<0.003	-	-	-
Lead	0.000736	<0.0002	0.00736	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00102	<0.001	0.0102	<0.01	-	-	-
Vanadium	0.002	<0.001	0.02	<0.01	-	-	-
Zinc	0.0367	<0.001	0.367	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000891	<0.00001	0.000891	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000721	<0.000005	0.0000721	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000408	<0.000005	0.000408	<0.00005	-	-	-
Anthracene by GCMS	0.00000654	<0.000005	0.0000654	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000703	<0.000005	0.000703	<0.00005	-	-	-
Fluorene by GCMS	0.00000673	<0.000005	0.0000673	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000302	<0.000005	0.000302	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000261	<0.000082	0.00261	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,740.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.5
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548087
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,740.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

16/11/2018 16:48:06

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548092
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J4
Depth (m)	1.40 - 1.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00452	<0.001	0.0452	<0.01	-	-	-
Copper	0.000963	<0.0003	0.00963	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00116	<0.001	0.0116	<0.01	-	-	-
Vanadium	0.00231	<0.001	0.0231	<0.01	-	-	-
Zinc	0.00393	<0.001	0.0393	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000117	<0.00001	0.00117	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000995	<0.000005	0.0000995	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000752	<0.000005	0.000752	<0.00005	-	-	-
Anthracene by GCMS	0.00000961	<0.000005	0.0000961	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000518	<0.000005	0.000518	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000602	<0.000005	0.000602	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000323	<0.000082	0.00323	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.93
Conductivity (µS/cm)	1,730.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548092
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J4
Depth (m)	1.40 - 1.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.93
Conductivity (µS/cm)	1,730.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.61
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.8
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548111
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000344	<0.00001	0.000344	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00107	<0.0005	0.0107	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00392	<0.001	0.0392	<0.01	-	-	-
Copper	0.00289	<0.0003	0.0289	<0.003	-	-	-
Lead	0.000214	<0.0002	0.00214	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000481	<0.0004	0.00481	<0.004	-	-	-
Selenium	0.00206	<0.001	0.0206	<0.01	-	-	-
Vanadium	0.077	<0.001	0.77	<0.01	-	-	-
Zinc	0.00235	<0.001	0.0235	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.525	<0.019	5.25	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000224	<0.00001	0.000224	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000451	<0.000005	0.000451	<0.00005	-	-	-
Anthracene by GCMS	0.00000903	<0.000005	0.0000903	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000327	<0.000005	0.000327	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000476	<0.000005	0.000476	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000957	<0.000002	0.0000957	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000166	<0.000082	0.00166	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	10.86
Conductivity (µS/cm)	316.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.61
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.8
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548111
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	10.86
Conductivity (µS/cm)	316.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548115
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000482	<0.00001	0.000482	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000628	<0.0005	0.00628	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00235	<0.001	0.0235	<0.01	-	-	-
Copper	0.00401	<0.0003	0.0401	<0.003	-	-	-
Lead	0.000241	<0.0002	0.00241	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000496	<0.0004	0.00496	<0.004	-	-	-
Selenium	0.00167	<0.001	0.0167	<0.01	-	-	-
Vanadium	0.0443	<0.001	0.443	<0.01	-	-	-
Zinc	0.00307	<0.001	0.0307	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000321	<0.00001	0.000321	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000314	<0.000005	0.000314	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000391	<0.000005	0.000391	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000103	<0.000082	0.00103	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	11.21
Conductivity (µS/cm)	534.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548115
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	11.21
Conductivity (µS/cm)	534.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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16:47:22 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548126
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00102	<0.0003	0.0102	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000619	<0.0004	0.00619	<0.004	-	-	-
Selenium	0.00105	<0.001	0.0105	<0.01	-	-	-
Vanadium	0.039	<0.001	0.39	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000196	<0.00001	0.000196	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000219	<0.000005	0.000219	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	1,700.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548126
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	1,700.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548131
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000508	<0.0005	0.00508	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0012	<0.0003	0.012	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000614	<0.0004	0.00614	<0.004	-	-	-
Selenium	0.00276	<0.001	0.0276	<0.01	-	-	-
Vanadium	0.0446	<0.001	0.446	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000023	<0.00001	0.00023	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000101	<0.000005	0.000101	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000898	<0.000005	0.0000898	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000992	<0.000005	0.0000992	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	9.81
Conductivity (µS/cm)	1,110.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548131
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	9.81
Conductivity (µS/cm)	1,110.00
Temperature (°C)	17.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548138
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0022	<0.0005	0.022	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00117	<0.001	0.0117	<0.01	-	-	-
Copper	0.000813	<0.0003	0.00813	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00232	<0.001	0.0232	<0.01	-	-	-
Vanadium	0.0331	<0.001	0.331	<0.01	-	-	-
Zinc	0.00244	<0.001	0.0244	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000164	<0.00001	0.000164	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000818	<0.000005	0.000818	<0.00005	-	-	-
Anthracene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000497	<0.000005	0.000497	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000436	<0.000005	0.000436	<0.00005	-	-	-
Pyrene by GCMS	0.0000666	<0.000005	0.000666	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000712	<0.000005	0.000712	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000352	<0.000005	0.000352	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000382	<0.000002	0.000382	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000428	<0.000005	0.000428	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000339	<0.000005	0.000339	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000527	<0.000082	0.00527	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.91
Conductivity (µS/cm)	147.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548138
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.91
Conductivity (µS/cm)	147.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548150
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000144	<0.00001	0.000144	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00227	<0.0005	0.0227	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00161	<0.001	0.0161	<0.01	-	-	-
Copper	0.0025	<0.0003	0.025	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000637	<0.0004	0.00637	<0.004	-	-	-
Selenium	0.00237	<0.001	0.0237	<0.01	-	-	-
Vanadium	0.078	<0.001	0.78	<0.01	-	-	-
Zinc	0.00277	<0.001	0.0277	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000249	<0.00001	0.000249	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000575	<0.000005	0.0000575	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000509	<0.000005	0.0000509	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000373	<0.000005	0.000373	<0.00005	-	-	-
Anthracene by GCMS	0.00000695	<0.000005	0.0000695	<0.00005	-	-	-
Phenanthrene by GCMS	0.000026	<0.000005	0.00026	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Pyrene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000787	<0.000002	0.0000787	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000875	<0.000005	0.0000875	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000217	<0.000082	0.00217	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	251.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548150
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	251.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548160
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000609	<0.0005	0.00609	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00126	<0.001	0.0126	<0.01	-	-	-
Copper	0.00998	<0.0003	0.0998	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00249	<0.0004	0.0249	<0.004	-	-	-
Selenium	0.00255	<0.001	0.0255	<0.01	-	-	-
Vanadium	0.0276	<0.001	0.276	<0.01	-	-	-
Zinc	0.00189	<0.001	0.0189	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000209	<0.00001	0.00209	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000613	<0.000005	0.000613	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000911	<0.000005	0.0000911	<0.00005	-	-	-
Fluoranthene by GCMS	0.000204	<0.000005	0.00204	<0.00005	-	-	-
Anthracene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Phenanthrene by GCMS	0.000199	<0.000005	0.00199	<0.00005	-	-	-
Fluorene by GCMS	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Chrysene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Pyrene by GCMS	0.000154	<0.000005	0.00154	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000874	<0.000082	0.00874	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	11.52
Conductivity (µS/cm)	1,010.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548160
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Oct-2018
pH (pH Units)	11.52
Conductivity (µS/cm)	1,010.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548185
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00192	<0.0005	0.0192	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00143	<0.001	0.0143	<0.01	-	-	-
Copper	0.00255	<0.0003	0.0255	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000406	<0.0004	0.00406	<0.004	-	-	-
Selenium	0.00327	<0.001	0.0327	<0.01	-	-	-
Vanadium	0.103	<0.001	1.03	<0.01	-	-	-
Zinc	0.0122	<0.001	0.122	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000278	<0.00001	0.000278	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000091	<0.000005	0.00091	<0.00005	-	-	-
Anthracene by GCMS	0.00000918	<0.000005	0.0000918	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000294	<0.000005	0.000294	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000262	<0.000005	0.000262	<0.00005	-	-	-
Pyrene by GCMS	0.00013	<0.000005	0.0013	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000196	<0.000005	0.000196	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000674	<0.000005	0.000674	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000291	<0.000005	0.000291	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000035	<0.000002	0.00035	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000251	<0.000005	0.000251	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000026	<0.000005	0.00026	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000516	<0.000082	0.00516	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.70
Conductivity (µS/cm)	211.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548185
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.70
Conductivity (µS/cm)	211.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548198
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000317	<0.00001	0.000317	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000798	<0.0005	0.00798	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00145	<0.001	0.0145	<0.01	-	-	-
Copper	0.00248	<0.0003	0.0248	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00412	<0.001	0.0412	<0.01	-	-	-
Vanadium	0.168	<0.001	1.68	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000046	<0.00001	0.00046	<0.0001	-	-	-
Acenaphthene by GCMS	0.000034	<0.000005	0.00034	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000859	<0.000005	0.0000859	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000875	<0.000005	0.000875	<0.00005	-	-	-
Anthracene by GCMS	0.00000869	<0.000005	0.0000869	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000214	<0.000005	0.000214	<0.00005	-	-	-
Fluorene by GCMS	0.0000099	<0.000005	0.000099	<0.00005	-	-	-
Chrysene by GCMS	0.000028	<0.000005	0.00028	<0.00005	-	-	-
Pyrene by GCMS	0.000195	<0.000005	0.00195	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000162	<0.000005	0.000162	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000981	<0.000002	0.0000981	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000173	<0.000005	0.000173	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000621	<0.000005	0.0000621	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00052	<0.000082	0.0052	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	367.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548198
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	367.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548239
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000219	<0.00001	0.000219	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000722	<0.0005	0.00722	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00107	<0.001	0.0107	<0.01	-	-	-
Copper	0.002	<0.0003	0.02	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00059	<0.0004	0.0059	<0.004	-	-	-
Selenium	0.00362	<0.001	0.0362	<0.01	-	-	-
Vanadium	0.0361	<0.001	0.361	<0.01	-	-	-
Zinc	0.00135	<0.001	0.0135	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00219	<0.00001	0.0219	<0.0001	-	-	-
Acenaphthene by GCMS	0.000347	<0.000005	0.00347	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000283	<0.000005	0.000283	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000276	<0.000005	0.000276	<0.00005	-	-	-
Anthracene by GCMS	0.0000536	<0.000005	0.000536	<0.00005	-	-	-
Phenanthrene by GCMS	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Fluorene by GCMS	0.000188	<0.000005	0.00188	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000248	<0.000005	0.000248	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00301	<0.000082	0.0301	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.34
Conductivity (µS/cm)	1,070.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548239
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.34
Conductivity (µS/cm)	1,070.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

16/11/2018 16:48:06

16:47:22 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548253
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00158	<0.0005	0.0158	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00122	<0.001	0.0122	<0.01	-	-	-
Copper	0.0105	<0.0003	0.105	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00303	<0.0004	0.0303	<0.004	-	-	-
Selenium	0.00545	<0.001	0.0545	<0.01	-	-	-
Vanadium	0.13	<0.001	1.3	<0.01	-	-	-
Zinc	0.00126	<0.001	0.0126	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000158	<0.00001	0.00158	<0.0001	-	-	-
Acenaphthene by GCMS	0.000146	<0.000005	0.00146	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000737	<0.000005	0.000737	<0.00005	-	-	-
Anthracene by GCMS	0.000033	<0.000005	0.00033	<0.00005	-	-	-
Phenanthrene by GCMS	0.000173	<0.000005	0.00173	<0.00005	-	-	-
Fluorene by GCMS	0.000035	<0.000005	0.00035	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000617	<0.000005	0.000617	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000693	<0.000082	0.00693	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.03
Conductivity (µS/cm)	523.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548253
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-I8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.03
Conductivity (µS/cm)	523.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548282
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.09	<0.05	0.9	<0.5	-	-	-
Arsenic	0.00296	<0.0005	0.0296	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00752	<0.0003	0.0752	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00333	<0.003	0.0333	<0.03	-	-	-
Nickel	0.00144	<0.0004	0.0144	<0.004	-	-	-
Selenium	0.00152	<0.001	0.0152	<0.01	-	-	-
Vanadium	0.00243	<0.001	0.0243	<0.01	-	-	-
Zinc	0.00357	<0.001	0.0357	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.491	<0.019	4.91	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000325	<0.000005	0.000325	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000229	<0.000005	0.000229	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000266	<0.000005	0.000266	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000278	<0.000005	0.000278	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000199	<0.000002	0.000199	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000034	<0.000005	0.00034	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000238	<0.000005	0.000238	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0002	<0.000082	0.002	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.37
Conductivity (µS/cm)	175.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548282
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.37
Conductivity (µS/cm)	175.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548298
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.634	<0.2	6.34	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000899	<0.0005	0.00899	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00108	<0.0003	0.0108	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.133	<0.003	1.33	<0.03	-	-	-
Nickel	0.00111	<0.0004	0.0111	<0.004	-	-	-
Selenium	0.00142	<0.001	0.0142	<0.01	-	-	-
Vanadium	0.00827	<0.001	0.0827	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.257	<0.019	2.57	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000297	<0.00001	0.000297	<0.0001	-	-	-
Acenaphthene by GCMS	0.000193	<0.000005	0.00193	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000778	<0.000005	0.0000778	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000623	<0.000005	0.000623	<0.00005	-	-	-
Anthracene by GCMS	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000692	<0.000005	0.000692	<0.00005	-	-	-
Fluorene by GCMS	0.000043	<0.000005	0.00043	<0.00005	-	-	-
Chrysene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Pyrene by GCMS	0.0000475	<0.000005	0.000475	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000081	<0.000005	0.000081	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000143	<0.000002	0.000143	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000503	<0.000082	0.00503	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.99
Conductivity (µS/cm)	187.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548298
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.99
Conductivity (µS/cm)	187.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548317
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.83	<0.2	8.3	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0035	<0.0005	0.035	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00388	<0.001	0.0388	<0.01	-	-	-
Copper	0.0523	<0.0003	0.523	<0.003	-	-	-
Lead	0.00466	<0.0002	0.0466	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00411	<0.0004	0.0411	<0.004	-	-	-
Selenium	0.00293	<0.001	0.0293	<0.01	-	-	-
Vanadium	0.0075	<0.001	0.075	<0.01	-	-	-
Zinc	0.00621	<0.001	0.0621	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000038	<0.00001	0.00038	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.90
Conductivity (µS/cm)	2,110.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548317
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.90
Conductivity (µS/cm)	2,110.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548332
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.228	<0.2	2.28	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00214	<0.001	0.0214	<0.01	-	-	-
Copper	0.00727	<0.0003	0.0727	<0.003	-	-	-
Lead	0.00155	<0.0002	0.0155	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0015	<0.0004	0.015	<0.004	-	-	-
Selenium	0.00366	<0.001	0.0366	<0.01	-	-	-
Vanadium	0.00159	<0.001	0.0159	<0.01	-	-	-
Zinc	0.00369	<0.001	0.0369	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000338	<0.00001	0.00338	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000351	<0.000082	0.00351	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	1,190.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548332
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	1,190.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

16/11/2018 16:48:06

16:47:22 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548346
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000127	<0.00001	0.000127	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00328	<0.001	0.0328	<0.01	-	-	-
Copper	0.00397	<0.0003	0.0397	<0.003	-	-	-
Lead	0.00067	<0.0002	0.0067	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000543	<0.0004	0.00543	<0.004	-	-	-
Selenium	0.0023	<0.001	0.023	<0.01	-	-	-
Vanadium	0.00671	<0.001	0.0671	<0.01	-	-	-
Zinc	0.0115	<0.001	0.115	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00283	<0.00001	0.0283	<0.0001	-	-	-
Acenaphthene by GCMS	0.000033	<0.000005	0.00033	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000742	<0.000005	0.000742	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
Anthracene by GCMS	0.00000965	<0.000005	0.0000965	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000367	<0.000005	0.000367	<0.00005	-	-	-
Fluorene by GCMS	0.0000331	<0.000005	0.000331	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00305	<0.000082	0.0305	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	1,130.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548346
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	1,130.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.112	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548372
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H5
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	8.77	<0.2	87.7	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0128	<0.0005	0.128	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0207	<0.0003	0.207	<0.003	-	-	-
Lead	0.000322	<0.0002	0.00322	<0.002	-	-	-
Manganese	0.0838	<0.003	0.838	<0.03	-	-	-
Nickel	0.0062	<0.0004	0.062	<0.004	-	-	-
Selenium	0.00202	<0.001	0.0202	<0.01	-	-	-
Vanadium	0.00442	<0.001	0.0442	<0.01	-	-	-
Zinc	0.0124	<0.001	0.124	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.53	<0.019	5.3	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000187	<0.000005	0.000187	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000148	<0.000005	0.000148	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.57
Conductivity (µS/cm)	210.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.112	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548372
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H5
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.57
Conductivity (µS/cm)	210.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548388
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000575	<0.0005	0.00575	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0116	<0.0003	0.116	<0.003	-	-	-
Lead	0.0133	<0.0002	0.133	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00102	<0.0004	0.0102	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00869	<0.001	0.0869	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000121	<0.00001	0.000121	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000993	<0.000005	0.0000993	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.04
Conductivity (µS/cm)	4,630.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548388
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.04
Conductivity (µS/cm)	4,630.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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16:47:22 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548403
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.459	<0.2	4.59	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.1	<0.05	1	<0.5	-	-	-
Arsenic	0.00169	<0.0005	0.0169	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0142	<0.0003	0.142	<0.003	-	-	-
Lead	0.000238	<0.0002	0.00238	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00241	<0.0004	0.0241	<0.004	-	-	-
Selenium	0.0119	<0.001	0.119	<0.01	-	-	-
Vanadium	0.0515	<0.001	0.515	<0.01	-	-	-
Zinc	0.0107	<0.001	0.107	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.564	<0.019	5.64	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0102	<0.00001	0.102	<0.0001	-	-	-
Acenaphthene by GCMS	0.00106	<0.000005	0.0106	<0.00005	-	-	-
Acenaphthylene by GCMS	0.012	<0.000005	0.12	<0.00005	-	-	-
Fluoranthene by GCMS	0.00474	<0.000005	0.0474	<0.00005	-	-	-
Anthracene by GCMS	0.00163	<0.000005	0.0163	<0.00005	-	-	-
Phenanthrene by GCMS	0.0115	<0.000005	0.115	<0.00005	-	-	-
Fluorene by GCMS	0.00573	<0.000005	0.0573	<0.00005	-	-	-
Chrysene by GCMS	0.000208	<0.000005	0.00208	<0.00005	-	-	-
Pyrene by GCMS	0.00293	<0.000005	0.0293	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000183	<0.000005	0.00183	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000637	<0.000005	0.000637	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000674	<0.000002	0.000674	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000959	<0.000005	0.000959	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000481	<0.000005	0.000481	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0506	<0.000082	0.506	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.36
Conductivity (µS/cm)	494.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548403
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.025	<0.01	0.25	<0.1	-	-	-
Aromatics >EC16-EC21	0.036	<0.01	0.36	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.061	<0.01	0.61	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.063	<0.01	0.63	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.36
Conductivity (µS/cm)	494.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.127	**Natural Moisture Content (%)**	40.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	71
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548424
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-J4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	8.9	<0.2	89	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00383	<0.0005	0.0383	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00543	<0.0003	0.0543	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00617	<0.003	0.0617	<0.03	-	-	-
Nickel	0.00234	<0.0004	0.0234	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00138	<0.001	0.0138	<0.01	-	-	-
Zinc	0.00117	<0.001	0.0117	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000981	<0.000005	0.0000981	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000728	<0.000005	0.0000728	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.24
Conductivity (µS/cm)	316.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.863

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.127	**Natural Moisture Content (%)**	40.8
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	71
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548424
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-J4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.24
Conductivity (µS/cm)	316.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.863

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548433
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-J4
Depth (m)	0.70 - 1.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	4.45	<0.2	44.5	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00051	<0.0005	0.0051	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00157	<0.001	0.0157	<0.01	-	-	-
Copper	0.00723	<0.0003	0.0723	<0.003	-	-	-
Lead	0.0019	<0.0002	0.019	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000537	<0.0004	0.00537	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00714	<0.001	0.0714	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000011	<0.00001	0.00011	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000172	<0.000005	0.000172	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.43
Conductivity (µS/cm)	5,300.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.72
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.7
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548433
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-J4
Depth (m)	0.70 - 1.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.43
Conductivity (µS/cm)	5,300.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.26
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548447
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-J4
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.011	<0.001	0.11	<0.01	-	-	-
Copper	0.00501	<0.0003	0.0501	<0.003	-	-	-
Lead	0.00954	<0.0002	0.0954	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0091	<0.001	0.091	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000187	<0.00001	0.00187	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Fluoranthene by GCMS	0.000238	<0.000005	0.00238	<0.00005	-	-	-
Anthracene by GCMS	0.0000231	<0.000005	0.000231	<0.00005	-	-	-
Phenanthrene by GCMS	0.00016	<0.000005	0.0016	<0.00005	-	-	-
Fluorene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Chrysene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Pyrene by GCMS	0.000248	<0.000005	0.00248	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000769	<0.000005	0.0000769	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000929	<0.000082	0.00929	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.17
Conductivity (µS/cm)	6,730.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.26
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548447
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-J4
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.17
Conductivity (µS/cm)	6,730.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.122	**Natural Moisture Content (%)**	35.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	74
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548458
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	5.46	<0.2	54.6	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00329	<0.0005	0.0329	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00669	<0.0003	0.0669	<0.003	-	-	-
Lead	0.000366	<0.0002	0.00366	<0.002	-	-	-
Manganese	0.00642	<0.003	0.0642	<0.03	-	-	-
Nickel	0.00275	<0.0004	0.0275	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00205	<0.001	0.0205	<0.01	-	-	-
Zinc	0.00509	<0.001	0.0509	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.318	<0.019	3.18	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000172	<0.00001	0.000172	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000774	<0.000005	0.0000774	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000737	<0.000005	0.0000737	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000554	<0.000005	0.0000554	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.34
Conductivity (µS/cm)	169.00
Temperature (°C)	16.30
Volume Leachant (Litres)	0.868

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.122	**Natural Moisture Content (%)**	35.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	74
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548458
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.34
Conductivity (µS/cm)	169.00
Temperature (°C)	16.30
Volume Leachant (Litres)	0.868

Mcerts Certification does not apply to leachates

16/11/2018 16:48:06

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548465
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00777	<0.001	0.0777	<0.01	-	-	-
Copper	0.00717	<0.0003	0.0717	<0.003	-	-	-
Lead	0.000515	<0.0002	0.00515	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000461	<0.0004	0.00461	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00236	<0.001	0.0236	<0.01	-	-	-
Zinc	0.00215	<0.001	0.0215	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000255	<0.00001	0.000255	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.00
Conductivity (µS/cm)	2,050.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548465
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	12.00
Conductivity (µS/cm)	2,050.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548469
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I4
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000664	<0.0005	0.00664	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0079	<0.001	0.079	<0.01	-	-	-
Copper	0.0164	<0.0003	0.164	<0.003	-	-	-
Lead	0.00116	<0.0002	0.0116	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00165	<0.0004	0.0165	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00676	<0.001	0.0676	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000137	<0.00001	0.000137	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000255	<0.000005	0.000255	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000224	<0.000005	0.000224	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000232	<0.000005	0.000232	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000849	<0.000082	0.000849	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.95
Conductivity (µS/cm)	3,840.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548469
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-I4
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	11.95
Conductivity (µS/cm)	3,840.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.122	**Natural Moisture Content (%)**	35.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	74
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548486
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	2.48	<0.2	24.8	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00122	<0.0005	0.0122	<0.005	-	-	-
Cadmium	0.000123	<0.00008	0.00123	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00545	<0.0003	0.0545	<0.003	-	-	-
Lead	0.000383	<0.0002	0.00383	<0.002	-	-	-
Manganese	0.276	<0.003	2.76	<0.03	-	-	-
Nickel	0.00238	<0.0004	0.0238	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00106	<0.001	0.0106	<0.01	-	-	-
Zinc	0.017	<0.001	0.17	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000335	<0.00001	0.000335	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000078	<0.000005	0.000078	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000893	<0.000005	0.0000893	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000672	<0.000005	0.0000672	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.30
Conductivity (µS/cm)	266.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.868

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.122	**Natural Moisture Content (%)**	35.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	74
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548486
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.30
Conductivity (µS/cm)	266.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.868

Mcerts Certification does not apply to leachates

16/11/2018 16:48:06

16:47:22 16/11/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548490
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.202	<0.2	2.02	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0087	<0.0005	0.087	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.015	<0.0003	0.15	<0.003	-	-	-
Lead	0.000572	<0.0002	0.00572	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00227	<0.0004	0.0227	<0.004	-	-	-
Selenium	0.00742	<0.001	0.0742	<0.01	-	-	-
Vanadium	0.0471	<0.001	0.471	<0.01	-	-	-
Zinc	0.00181	<0.001	0.0181	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.445	<0.019	4.45	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	3.57	<0.001	35.7	<0.01	-	-	-
Acenaphthene by GCMS	0.0623	<0.0005	0.623	<0.005	-	-	-
Acenaphthylene by GCMS	0.111	<0.0005	1.11	<0.005	-	-	-
Fluoranthene by GCMS	0.0156	<0.0005	0.156	<0.005	-	-	-
Anthracene by GCMS	0.0145	<0.0005	0.145	<0.005	-	-	-
Phenanthrene by GCMS	0.059	<0.0005	0.59	<0.005	-	-	-
Fluorene by GCMS	0.0489	<0.0005	0.489	<0.005	-	-	-
Chrysene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Pyrene by GCMS	0.0108	<0.0005	0.108	<0.005	-	-	-
Benz(a)anthracene by GCMS	0.0029	<0.0005	0.029	<0.005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Benzo(a)pyrene by GCMS	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Benzo(ghi)perylene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
PAH 16 EPA Total by GCMS	3.89	<0.0082	38.9	<0.082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	12	<0.05	120	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.024	<0.01	0.24	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.92
Conductivity (µS/cm)	140.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

16/11/2018 16:48:06

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548490
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.039	<0.01	0.39	<0.1	-	-	-
Aliphatics >C10-C12	7.12	<0.01	71.2	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.046	<0.01	0.46	<0.1	-	-	-
Aromatics >EC10-EC12	4.75	<0.01	47.5	<0.1	-	-	-
Aromatics >EC12-EC16	0.649	<0.01	6.49	<0.1	-	-	-
Aromatics >EC16-EC21	0.254	<0.01	2.54	<0.1	-	-	-
Aromatics >EC21-EC35	0.072	<0.01	0.72	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.975	<0.01	9.75	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	13	<0.01	130	<0.1	-	-	-
Toluene by GC	0.006	<0.004	0.06	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.012	<0.008	0.12	<0.08	-	-	-
o Xylene by GC	0.007	<0.003	0.07	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.019	<0.011	0.19	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.92
Conductivity (µS/cm)	140.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548494
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H4
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.42	<0.2	4.2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.42	<0.05	4.2	<0.5	-	-	-
Arsenic	0.00396	<0.0005	0.0396	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0011	<0.001	0.011	<0.01	-	-	-
Copper	0.0123	<0.0003	0.123	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00214	<0.0004	0.0214	<0.004	-	-	-
Selenium	0.00537	<0.001	0.0537	<0.01	-	-	-
Vanadium	0.0503	<0.001	0.503	<0.01	-	-	-
Zinc	0.00108	<0.001	0.0108	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.176	<0.019	1.76	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	7.29	<0.001	72.9	<0.01	-	-	-
Acenaphthene by GCMS	0.0815	<0.0005	0.815	<0.005	-	-	-
Acenaphthylene by GCMS	0.265	<0.0005	2.65	<0.005	-	-	-
Fluoranthene by GCMS	0.0193	<0.0005	0.193	<0.005	-	-	-
Anthracene by GCMS	0.0225	<0.0005	0.225	<0.005	-	-	-
Phenanthrene by GCMS	0.0958	<0.0005	0.958	<0.005	-	-	-
Fluorene by GCMS	0.0964	<0.0005	0.964	<0.005	-	-	-
Chrysene by GCMS	0.00336	<0.0005	0.0336	<0.005	-	-	-
Pyrene by GCMS	0.0132	<0.0005	0.132	<0.005	-	-	-
Benz(a)anthracene by GCMS	0.00239	<0.0005	0.0239	<0.005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00459	<0.0005	0.0459	<0.005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0044	<0.0005	0.044	<0.005	-	-	-
Benzo(a)pyrene by GCMS	0.00274	<0.0002	0.0274	<0.002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Benzo(ghi)perylene by GCMS	0.003	<0.0005	0.03	<0.005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00117	<0.0005	0.0117	<0.005	-	-	-
PAH 16 EPA Total by GCMS	7.91	<0.0082	79.1	<0.082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	18.6	<0.05	186	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.017	<0.01	0.17	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.67
Conductivity (µS/cm)	213.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548494
Sampled Date	17-Oct-2018
Customer Sample Ref.	3C-H4
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.041	<0.01	0.41	<0.1	-	-	-
Aliphatics >C10-C12	11.1	<0.01	111	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.048	<0.01	0.48	<0.1	-	-	-
Aromatics >EC10-EC12	7.41	<0.01	74.1	<0.1	-	-	-
Aromatics >EC12-EC16	1.3	<0.01	13	<0.1	-	-	-
Aromatics >EC16-EC21	0.338	<0.01	3.38	<0.1	-	-	-
Aromatics >EC21-EC35	0.052	<0.01	0.52	<0.1	-	-	-
Total Aromatics >EC12-EC35	1.69	<0.01	16.9	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	20.3	<0.01	203	<0.1	-	-	-
Toluene by GC	0.005	<0.004	0.05	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.012	<0.008	0.12	<0.08	-	-	-
o Xylene by GC	0.008	<0.003	0.08	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.02	<0.011	0.2	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.67
Conductivity (µS/cm)	213.00
Temperature (°C)	19.60
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548508
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00601	<0.0005	0.0601	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00234	<0.0003	0.0234	<0.003	-	-	-
Lead	0.000233	<0.0002	0.00233	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000536	<0.0004	0.00536	<0.004	-	-	-
Selenium	0.00253	<0.001	0.0253	<0.01	-	-	-
Vanadium	0.0347	<0.001	0.347	<0.01	-	-	-
Zinc	0.00283	<0.001	0.0283	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000787	<0.000005	0.000787	<0.00005	-	-	-
Anthracene by GCMS	0.0000135	<0.000005	0.000135	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000371	<0.000005	0.000371	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000464	<0.000005	0.000464	<0.00005	-	-	-
Pyrene by GCMS	0.0000674	<0.000005	0.000674	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000266	<0.000005	0.000266	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000762	<0.000005	0.000762	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000351	<0.000005	0.000351	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000418	<0.000002	0.000418	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000459	<0.000005	0.000459	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000378	<0.000005	0.000378	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000521	<0.000082	0.00521	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.60
Conductivity (µS/cm)	155.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

16/11/2018 16:48:06

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548508
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	8.60
Conductivity (µS/cm)	155.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

16/11/2018 16:48:06

16:47:22 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548515
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00501	<0.0005	0.0501	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0012	<0.001	0.012	<0.01	-	-	-
Copper	0.00556	<0.0003	0.0556	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00103	<0.0004	0.0103	<0.004	-	-	-
Selenium	0.00279	<0.001	0.0279	<0.01	-	-	-
Vanadium	0.0536	<0.001	0.536	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000162	<0.00001	0.000162	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000587	<0.000005	0.000587	<0.00005	-	-	-
Anthracene by GCMS	0.00000832	<0.000005	0.0000832	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000381	<0.000005	0.000381	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000294	<0.000005	0.000294	<0.00005	-	-	-
Pyrene by GCMS	0.0000446	<0.000005	0.000446	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000485	<0.000005	0.000485	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000276	<0.000005	0.000276	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000283	<0.000002	0.000283	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000251	<0.000005	0.000251	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00037	<0.000082	0.0037	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	189.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548515
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	189.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548523
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00754	<0.0005	0.0754	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00223	<0.0003	0.0223	<0.003	-	-	-
Lead	0.000224	<0.0002	0.00224	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000405	<0.0004	0.00405	<0.004	-	-	-
Selenium	0.00314	<0.001	0.0314	<0.01	-	-	-
Vanadium	0.0531	<0.001	0.531	<0.01	-	-	-
Zinc	0.00154	<0.001	0.0154	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00002	<0.00001	0.0002	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000635	<0.000005	0.0000635	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000766	<0.000005	0.0000766	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000762	<0.000005	0.000762	<0.00005	-	-	-
Anthracene by GCMS	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000426	<0.000005	0.000426	<0.00005	-	-	-
Fluorene by GCMS	0.00000681	<0.000005	0.0000681	<0.00005	-	-	-
Chrysene by GCMS	0.0000312	<0.000005	0.000312	<0.00005	-	-	-
Pyrene by GCMS	0.0000621	<0.000005	0.000621	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000222	<0.000005	0.000222	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000747	<0.000005	0.000747	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000286	<0.000005	0.000286	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000332	<0.000002	0.000332	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000994	<0.000005	0.0000994	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000601	<0.000005	0.000601	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000368	<0.000005	0.000368	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000531	<0.000082	0.00531	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.19
Conductivity (µS/cm)	151.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548523
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.19
Conductivity (µS/cm)	151.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548532
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00368	<0.0005	0.0368	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00135	<0.001	0.0135	<0.01	-	-	-
Copper	0.00117	<0.0003	0.0117	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00177	<0.001	0.0177	<0.01	-	-	-
Vanadium	0.0683	<0.001	0.683	<0.01	-	-	-
Zinc	0.00278	<0.001	0.0278	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000741	<0.000005	0.000741	<0.00005	-	-	-
Anthracene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000422	<0.000005	0.000422	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000259	<0.000005	0.000259	<0.00005	-	-	-
Pyrene by GCMS	0.0000524	<0.000005	0.000524	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000602	<0.000005	0.000602	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00002	<0.000005	0.0002	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000269	<0.000002	0.000269	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000784	<0.000005	0.0000784	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000285	<0.000005	0.000285	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000026	<0.000005	0.00026	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000394	<0.000082	0.00394	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.97
Conductivity (µS/cm)	105.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

16/11/2018 16:48:06

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.5
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548532
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.97
Conductivity (µS/cm)	105.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548543
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00456	<0.0005	0.0456	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00179	<0.001	0.0179	<0.01	-	-	-
Copper	0.00085	<0.0003	0.0085	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00179	<0.001	0.0179	<0.01	-	-	-
Vanadium	0.0476	<0.001	0.476	<0.01	-	-	-
Zinc	0.00116	<0.001	0.0116	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000811	<0.000005	0.000811	<0.00005	-	-	-
Anthracene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000473	<0.000005	0.000473	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000416	<0.000005	0.000416	<0.00005	-	-	-
Pyrene by GCMS	0.00007	<0.000005	0.0007	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000295	<0.000005	0.000295	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000865	<0.000005	0.000865	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000296	<0.000005	0.000296	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000431	<0.000002	0.000431	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000508	<0.000005	0.000508	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000388	<0.000005	0.000388	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000548	<0.000082	0.00548	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.69
Conductivity (µS/cm)	80.10
Temperature (°C)	18.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548543
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.69
Conductivity (µS/cm)	80.10
Temperature (°C)	18.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548551
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.00001	<0.00001	0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00454	<0.0005	0.0454	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00127	<0.001	0.0127	<0.01	-	-	-
Copper	0.000651	<0.0003	0.00651	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00156	<0.001	0.0156	<0.01	-	-	-
Vanadium	0.0433	<0.001	0.433	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0206	<0.019	0.206	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000678	<0.000005	0.000678	<0.00005	-	-	-
Anthracene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000408	<0.000005	0.000408	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000414	<0.000005	0.000414	<0.00005	-	-	-
Pyrene by GCMS	0.0000541	<0.000005	0.000541	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000185	<0.000005	0.000185	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000688	<0.000005	0.000688	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000284	<0.000005	0.000284	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000332	<0.000002	0.000332	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000379	<0.000005	0.000379	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000249	<0.000005	0.000249	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000427	<0.000082	0.00427	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.74
Conductivity (µS/cm)	84.20
Temperature (°C)	18.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	181018-22
Lab Sample Number(s)	18548551
Sampled Date	17-Oct-2018
Customer Sample Ref.	4C-J3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	20-Oct-2018
pH (pH Units)	9.74
Conductivity (µS/cm)	84.20
Temperature (°C)	18.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Test Completion Dates

Lab Sample No(s)	18548486	18548490	18548494	18548372	18548388	18548403	18548501	18548415	18548458	18548465
Customer Sample Ref.	3C-H4	3C-H4	3C-H4	3C-H5	3C-H5	3C-H5	3C-H4-V	3C-H5-V	3C-I4	3C-I4
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.50 - 1.50	2.70 - 2.70	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	23-Oct-2018		23-Oct-2018	24-Oct-2018		23-Oct-2018			23-Oct-2018	23-Oct-2018
Ammoniacal Nitrogen	26-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018			25-Oct-2018	26-Oct-2018
Ammonium Soil by Titration	23-Oct-2018	29-Oct-2018	24-Oct-2018	30-Oct-2018	24-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	24-Oct-2018	23-Oct-2018
Anions by Kone (soil)	24-Oct-2018		24-Oct-2018	24-Oct-2018		24-Oct-2018			24-Oct-2018	24-Oct-2018
Asbestos ID in Solid Samples	29-Oct-2018		29-Oct-2018	29-Oct-2018		29-Oct-2018			29-Oct-2018	29-Oct-2018
Calorific Value (S)*			16-Nov-2018			16-Nov-2018				
CEN 10:1 Leachate (1 Stage)	20-Oct-2018	31-Oct-2018	31-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018			20-Oct-2018	20-Oct-2018
CEN Readings	23-Oct-2018	01-Nov-2018	01-Nov-2018	24-Oct-2018	23-Oct-2018	24-Oct-2018			23-Oct-2018	24-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	26-Oct-2018	29-Oct-2018	26-Oct-2018	26-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	26-Oct-2018	26-Oct-2018
Dissolved Metals by ICP-MS	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018			29-Oct-2018	29-Oct-2018
EPH CWG (Aliphatic) Aqueous GC (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018	31-Oct-2018			31-Oct-2018	30-Oct-2018
EPH CWG (Aliphatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018	31-Oct-2018			31-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) GC (S)	25-Oct-2018	26-Oct-2018	26-Oct-2018	23-Oct-2018	25-Oct-2018	26-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
GRO by GC-FID (S)	27-Oct-2018	29-Oct-2018	30-Oct-2018	27-Oct-2018	29-Oct-2018	29-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	29-Oct-2018
GRO by GC-FID (W)	29-Oct-2018	29-Oct-2018	29-Oct-2018	24-Oct-2018	29-Oct-2018	29-Oct-2018			29-Oct-2018	29-Oct-2018
Mercury Dissolved	27-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	24-Oct-2018	29-Oct-2018			27-Oct-2018	27-Oct-2018
Metals in solid samples by OES	24-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018	28-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	24-Oct-2018	26-Oct-2018
PAH by GCMS	24-Oct-2018	24-Oct-2018	26-Oct-2018	22-Oct-2018	24-Oct-2018	22-Oct-2018	26-Oct-2018	24-Oct-2018	26-Oct-2018	24-Oct-2018
PAH Spec MS - Aqueous (W)	31-Oct-2018	02-Nov-2018	02-Nov-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018			30-Oct-2018	30-Oct-2018
pH	30-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018
pH Value	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018			31-Oct-2018	31-Oct-2018
Phenols by HPLC (S)	25-Oct-2018	25-Oct-2018	29-Oct-2018	24-Oct-2018	25-Oct-2018	26-Oct-2018	29-Oct-2018	25-Oct-2018	25-Oct-2018	29-Oct-2018
Sample description	19-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018
Total Organic Carbon	25-Oct-2018	24-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
Total Sulphate	30-Oct-2018		25-Oct-2018	24-Oct-2018		24-Oct-2018			25-Oct-2018	25-Oct-2018
Total Sulphur	23-Oct-2018		23-Oct-2018	20-Oct-2018		23-Oct-2018			24-Oct-2018	23-Oct-2018
TPH CWG (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018	31-Oct-2018			31-Oct-2018	30-Oct-2018
TPH CWG GC (S)	27-Oct-2018	29-Oct-2018	30-Oct-2018	27-Oct-2018	29-Oct-2018	29-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	29-Oct-2018
VOC MS (S)	29-Oct-2018	31-Oct-2018	01-Nov-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	01-Nov-2018	01-Nov-2018	31-Oct-2018

Lab Sample No(s)	18548469	18548282	18548317	18548332	18548346	18548126	18548131	18548150	18548160	18548185
Customer Sample Ref.	3C-I4	3C-I5	3C-I5	3C-I5	3C-I5	4C-I5	4C-I5	4C-I6	4C-I6	4C-I7
AGS Ref.										
Depth	2.00 - 2.00	0.30 - 0.30	0.80 - 0.80	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		23-Oct-2018		24-Oct-2018	23-Oct-2018	24-Oct-2018	24-Oct-2018	23-Oct-2018		23-Oct-2018
Ammoniacal Nitrogen	25-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018
Ammonium Soil by Titration	24-Oct-2018	23-Oct-2018	23-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	24-Oct-2018	29-Oct-2018	23-Oct-2018	30-Oct-2018
Anions by Kone (soil)		24-Oct-2018		24-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018		24-Oct-2018
Asbestos ID in Solid Samples		29-Oct-2018		29-Oct-2018	29-Oct-2018	29-Oct-2018	24-Oct-2018	24-Oct-2018		29-Oct-2018
CEN 10:1 Leachate (1 Stage)	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	19-Oct-2018	19-Oct-2018	20-Oct-2018	19-Oct-2018	20-Oct-2018
CEN Readings	24-Oct-2018	23-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	29-Oct-2018	29-Oct-2018	29-Oct-2018	26-Oct-2018	29-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018
Dissolved Metals by ICP-MS	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
EPH CWG (Aliphatic) Aqueous GC (W)	31-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
EPH CWG (Aliphatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	31-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018
GRO by GC-FID (S)	29-Oct-2018	27-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018
GRO by GC-FID (W)	30-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018
Mercury Dissolved	27-Oct-2018	29-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	24-Oct-2018	24-Oct-2018	29-Oct-2018	24-Oct-2018	24-Oct-2018
Metals in solid samples by OES	29-Oct-2018	30-Oct-2018	28-Oct-2018	24-Oct-2018	30-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	25-Oct-2018	26-Oct-2018
PAH by GCMS	26-Oct-2018	24-Oct-2018	26-Oct-2018	29-Oct-2018	24-Oct-2018	22-Oct-2018	22-Oct-2018	22-Oct-2018	22-Oct-2018	24-Oct-2018
PAH Spec MS - Aqueous (W)	30-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	31-Oct-2018	29-Oct-2018
pH	01-Nov-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018
pH Value	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
Phenols by HPLC (S)	25-Oct-2018	25-Oct-2018	29-Oct-2018	25-Oct-2018	29-Oct-2018	26-Oct-2018	24-Oct-2018	29-Oct-2018	24-Oct-2018	26-Oct-2018
Sample description	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	18-Oct-2018	19-Oct-2018
Total Organic Carbon	25-Oct-2018	30-Oct-2018	24-Oct-2018	30-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	30-Oct-2018	24-Oct-2018	25-Oct-2018
Total Sulphate		24-Oct-2018		24-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018		25-Oct-2018
Total Sulphur		23-Oct-2018		23-Oct-2018	23-Oct-2018	20-Oct-2018	20-Oct-2018	23-Oct-2018		23-Oct-2018
TPH CWG (W)	31-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
TPH CWG GC (S)	29-Oct-2018	27-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018
VOC MS (S)	29-Oct-2018	29-Oct-2018	29-Oct-2018	01-Nov-2018	31-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Lab Sample No(s)	18548198	18548239	18548253	18548476	18548359	18548171	18548220	18548268	18548424	18548433
Customer Sample Ref.	4C-I7	4C-I8	4C-I8	3C-I4-V	3C-I5-V	4C-I6-V	4C-I7-V	4C-I8-V	3C-J4	3C-J4
AGS Ref.										
Depth	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	3.40 - 3.40	3.20 - 3.20	2.20 - 2.20	1.80 - 1.80	1.90 - 1.90	0.50 - 0.50	0.70 - 1.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		24-Oct-2018								24-Oct-2018
Ammoniacal Nitrogen	26-Oct-2018	25-Oct-2018	25-Oct-2018						26-Oct-2018	25-Oct-2018
Ammonium Soil by Titration	24-Oct-2018	23-Oct-2018	24-Oct-2018	24-Oct-2018	23-Oct-2018	30-Oct-2018	23-Oct-2018	29-Oct-2018	24-Oct-2018	23-Oct-2018
Anions by Kone (soil)		24-Oct-2018								24-Oct-2018
Asbestos ID in Solid Samples		24-Oct-2018								29-Oct-2018
CEN 10:1 Leachate (1 Stage)	20-Oct-2018	20-Oct-2018	20-Oct-2018						20-Oct-2018	20-Oct-2018
CEN Readings	23-Oct-2018	23-Oct-2018	23-Oct-2018						23-Oct-2018	24-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	26-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018	25-Oct-2018	29-Oct-2018	29-Oct-2018	26-Oct-2018
Dissolved Metals by ICP-MS	29-Oct-2018	30-Oct-2018	30-Oct-2018						30-Oct-2018	29-Oct-2018
EPH CWG (Aliphatic) Aqueous GC (W)	31-Oct-2018	30-Oct-2018	30-Oct-2018						30-Oct-2018	31-Oct-2018
EPH CWG (Aliphatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	31-Oct-2018	30-Oct-2018	30-Oct-2018						30-Oct-2018	31-Oct-2018
EPH CWG (Aromatic) GC (S)	25-Oct-2018	26-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
GRO by GC-FID (S)	29-Oct-2018	29-Oct-2018	29-Oct-2018	27-Oct-2018	29-Oct-2018	29-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	30-Oct-2018
GRO by GC-FID (W)	29-Oct-2018	31-Oct-2018	29-Oct-2018						29-Oct-2018	29-Oct-2018
Mercury Dissolved	27-Oct-2018	24-Oct-2018	24-Oct-2018						29-Oct-2018	27-Oct-2018
Metals in solid samples by OES	28-Oct-2018	25-Oct-2018	28-Oct-2018	28-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
PAH by GCMS	26-Oct-2018	22-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	22-Oct-2018	22-Oct-2018	26-Oct-2018	24-Oct-2018	22-Oct-2018
PAH Spec MS - Aqueous (W)	30-Oct-2018	29-Oct-2018	29-Oct-2018						29-Oct-2018	30-Oct-2018
pH	01-Nov-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	26-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
pH Value	31-Oct-2018	31-Oct-2018	31-Oct-2018						30-Oct-2018	31-Oct-2018
Phenols by HPLC (S)	26-Oct-2018	26-Oct-2018	25-Oct-2018	29-Oct-2018	25-Oct-2018	26-Oct-2018	29-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018
Sample description	19-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018
Total Organic Carbon	25-Oct-2018	24-Oct-2018	24-Oct-2018	30-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	25-Oct-2018
Total Sulphate		24-Oct-2018								24-Oct-2018
Total Sulphur		20-Oct-2018								23-Oct-2018
TPH CWG (W)	31-Oct-2018	31-Oct-2018	30-Oct-2018						30-Oct-2018	31-Oct-2018
TPH CWG GC (S)	29-Oct-2018	29-Oct-2018	29-Oct-2018	27-Oct-2018	29-Oct-2018	29-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	30-Oct-2018
VOC MS (S)	30-Oct-2018	31-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	31-Oct-2018

Lab Sample No(s)	18548447	18548070	18548138	18548298	18548508	18548515	18548523	18548532	18548543	18548551
Customer Sample Ref.	3C-J4	4C-J1	4C-J1	4C-J1	4C-J2	4C-J2	4C-J2	4C-J3	4C-J3	4C-J3
AGS Ref.										
Depth	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	2.00 - 2.00	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	24-Oct-2018	24-Oct-2018	23-Oct-2018		23-Oct-2018	23-Oct-2018			23-Oct-2018	23-Oct-2018
Ammoniacal Nitrogen	26-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
Ammonium Soil by Titration	23-Oct-2018	24-Oct-2018	30-Oct-2018	24-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	24-Oct-2018	30-Oct-2018	30-Oct-2018
Anions by Kone (soil)	24-Oct-2018	24-Oct-2018	24-Oct-2018		24-Oct-2018	24-Oct-2018			24-Oct-2018	24-Oct-2018
Asbestos ID in Solid Samples	24-Oct-2018	29-Oct-2018	29-Oct-2018		29-Oct-2018	29-Oct-2018			24-Oct-2018	24-Oct-2018
CEN 10:1 Leachate (1 Stage)	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018	20-Oct-2018
CEN Readings	24-Oct-2018	24-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	24-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	29-Oct-2018	26-Oct-2018	26-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	26-Oct-2018	29-Oct-2018	26-Oct-2018
Dissolved Metals by ICP-MS	29-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
EPH CWG (Aliphatic) Aqueous GC (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
EPH CWG (Aliphatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018
GRO by GC-FID (S)	29-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
GRO by GC-FID (W)	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018
Mercury Dissolved	27-Oct-2018	27-Oct-2018	24-Oct-2018	29-Oct-2018	24-Oct-2018	29-Oct-2018	27-Oct-2018	24-Oct-2018	24-Oct-2018	29-Oct-2018
Metals in solid samples by OES	30-Oct-2018	24-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	28-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
PAH by GCMS	24-Oct-2018	24-Oct-2018	26-Oct-2018	24-Oct-2018	24-Oct-2018	26-Oct-2018	26-Oct-2018	24-Oct-2018	24-Oct-2018	26-Oct-2018
PAH Spec MS - Aqueous (W)	29-Oct-2018	31-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018
pH	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	01-Nov-2018	30-Oct-2018	30-Oct-2018
pH Value	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
Phenols by HPLC (S)	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	01-Nov-2018
Sample description	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018
Total Organic Carbon	25-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	30-Oct-2018	25-Oct-2018
Total Sulphate	25-Oct-2018	24-Oct-2018	24-Oct-2018		24-Oct-2018	24-Oct-2018			24-Oct-2018	24-Oct-2018
Total Sulphur	23-Oct-2018	23-Oct-2018	24-Oct-2018		23-Oct-2018	23-Oct-2018			23-Oct-2018	23-Oct-2018
TPH CWG (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
TPH CWG GC (S)	29-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018
VOC MS (S)	31-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181018-22	**Client Reference:**		**Report Number:**	481508
Location:	Llanwern	**Order Number:**	LLA491	**Superseded Report:**	481496

Lab Sample No(s)	18548079	18548087	18548092	18548111	18548115	18548453	18548442	18548074	18548098	18548120
Customer Sample Ref.	4C-J4	4C-J4	4C-J4	4C-J5	4C-J5	3C-J4-V	4C-J1-V	4C-J3-V	4C-J4-V	4C-J5-V
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	3.70 - 3.70	2.70 - 2.70	1.90 - 1.90	2.00 - 2.00	1.70 - 1.70
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	24-Oct-2018		24-Oct-2018		24-Oct-2018					
Ammoniacal Nitrogen	26-Oct-2018	26-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018					
Ammonium Soil by Titration	24-Oct-2018	24-Oct-2018	24-Oct-2018	23-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	24-Oct-2018	29-Oct-2018
Anions by Kone (soil)	24-Oct-2018		24-Oct-2018		24-Oct-2018					
Asbestos ID in Solid Samples	29-Oct-2018		24-Oct-2018		24-Oct-2018					
CEN 10:1 Leachate (1 Stage)	20-Oct-2018	20-Oct-2018	20-Oct-2018	19-Oct-2018	19-Oct-2018					
CEN Readings	23-Oct-2018	24-Oct-2018	24-Oct-2018	31-Oct-2018	23-Oct-2018					
Cyanide Comp/Free/Total/Thiocyanate	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	29-Oct-2018	31-Oct-2018	29-Oct-2018	25-Oct-2018
Dissolved Metals by ICP-MS	30-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018					
EPH CWG (Aliphatic) Aqueous GC (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018					
EPH CWG (Aliphatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018					
EPH CWG (Aromatic) GC (S)	25-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	23-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	23-Oct-2018
GRO by GC-FID (S)	29-Oct-2018	27-Oct-2018	27-Oct-2018	30-Oct-2018	30-Oct-2018	27-Oct-2018	29-Oct-2018	27-Oct-2018	27-Oct-2018	29-Oct-2018
GRO by GC-FID (W)	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018					
Mercury Dissolved	24-Oct-2018	27-Oct-2018	27-Oct-2018	29-Oct-2018	24-Oct-2018					
Metals in solid samples by OES	24-Oct-2018	28-Oct-2018	24-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	25-Oct-2018
PAH by GCMS	26-Oct-2018	26-Oct-2018	24-Oct-2018	22-Oct-2018	22-Oct-2018	26-Oct-2018	26-Oct-2018	24-Oct-2018	24-Oct-2018	22-Oct-2018
PAH Spec MS - Aqueous (W)	29-Oct-2018	31-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018					
pH	30-Oct-2018	01-Nov-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	29-Oct-2018
pH Value	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018					
Phenols by HPLC (S)	25-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	24-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	25-Oct-2018	26-Oct-2018
Sample description	19-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018	18-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	19-Oct-2018	18-Oct-2018
Total Organic Carbon	25-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	24-Oct-2018	30-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018
Total Sulphate	24-Oct-2018		24-Oct-2018		24-Oct-2018					
Total Sulphur	23-Oct-2018		23-Oct-2018		20-Oct-2018					
TPH CWG (W)	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018					
TPH CWG GC (S)	29-Oct-2018	27-Oct-2018	27-Oct-2018	30-Oct-2018	30-Oct-2018	27-Oct-2018	29-Oct-2018	27-Oct-2018	27-Oct-2018	29-Oct-2018
VOC MS (S)	01-Nov-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
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Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	12 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181020-29
Your Reference:	
Location:	Llanwern
Report No:	480661

This report has been revised and directly supersedes 479955 in its entirety.

We received 46 samples on Saturday October 20, 2018 and 46 of these samples were scheduled for analysis which was completed on Monday November 12, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18569608	3C-B5		0.50 - 0.50	18/10/2018
18569616	3C-B5		1.00 - 1.00	18/10/2018
18569620	3C-B5-V		1.40 - 1.40	18/10/2018
18569592	3C-C5		0.50 - 0.50	18/10/2018
18569601	3C-C5		1.00 - 1.00	18/10/2018
18569571	3C-D5		0.80 - 0.80	18/10/2018
18569579	3C-D5		1.60 - 1.60	18/10/2018
18569583	3C-D5-V		2.60 - 2.60	18/10/2018
18569551	3C-E5		0.50 - 0.50	18/10/2018
18569555	3C-E5		1.50 - 1.50	18/10/2018
18569560	3C-E5		2.00 - 2.00	18/10/2018
18569439	4C-E2		0.50 - 0.50	18/10/2018
18569443	4C-E2		0.70 - 0.70	18/10/2018
18569632	4C-E5		0.50 - 0.50	18/10/2018
18569636	4C-E5		1.00 - 1.00	18/10/2018
18569575	4C-E6		0.50 - 0.50	18/10/2018
18569624	4C-E6		1.00 - 1.00	18/10/2018
18569400	4C-E7		0.50 - 0.50	18/10/2018
18569462	4C-E7		1.00 - 1.00	18/10/2018
18569525	4C-E7		1.40 - 1.40	18/10/2018
18569566	3C-E5-V		3.40 - 3.40	18/10/2018
18569646	4C-E5-V		2.00 - 2.00	18/10/2018
18569628	4C-E6-V		2.00 - 2.00	18/10/2018
18569533	3C-F5		0.50 - 0.50	18/10/2018
18569538	3C-F5		1.00 - 1.00	18/10/2018
18569542	3C-F5		2.00 - 2.00	18/10/2018
18569547	3C-F5-V		3.40 - 3.40	18/10/2018
18569504	3C-G4		0.50 - 0.50	18/10/2018
18569512	3C-G4		1.00 - 1.00	18/10/2018
18569520	3C-G4		2.00 - 2.00	18/10/2018
18569447	3C-G5		0.50 - 0.50	18/10/2018
18569451	3C-G5		1.00 - 1.00	18/10/2018
18569455	3C-G5		1.50 - 1.50	18/10/2018
18569415	4C-G8		0.50 - 0.50	18/10/2018
18569420	4C-G8		1.00 - 1.00	18/10/2018
18569529	3C-G4-V		3.10 - 3.10	18/10/2018
18569469	3C-G5-V		3.00 - 3.00	18/10/2018
18569427	4C-G8-V		2.60 - 2.60	18/10/2018
18569496	3C-I3		0.50 - 0.50	18/10/2018
18569500	3C-I3		1.50 - 1.50	18/10/2018
18569476	3C-J3		0.50 - 0.50	18/10/2018
18569480	3C-J3		1.50 - 1.50	18/10/2018
18569484	3C-J3		2.00 - 2.00	18/10/2018
18569492	3C-J3-V		3.40 - 3.40	18/10/2018
18569431	4C-K2		0.50 - 0.50	18/10/2018
18569435	4C-K2		1.00 - 1.00	18/10/2018

Maximum Sample/Coolbox Temperature (°C) : **10.8**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																		
			18569608			18569616			18569620		18569592			18569601			18569571			18569579	
			Customer Sample Reference																		
			3C-B5			3C-B5			3C-B5-V		3C-C5			3C-C5			3C-D5			3C-D5	
			AGS Reference																		
			Depth (m)																		
			0.50 - 0.50			1.00 - 1.00			1.40 - 1.40		0.50 - 0.50			1.00 - 1.00			0.80 - 0.80			1.60 - 1.60	
			Container																		
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type																		
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 24					X								X			X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 36	X			X					X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 46		X			X		X			X			X			X				X
Anions by Kone (soil)	All	NDPs: 0 Tests: 24					X								X			X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 24				X								X			X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2																			
CEN Readings	All	NDPs: 0 Tests: 36	X			X					X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 82	X	X		X	X		X		X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 36	X			X					X			X			X			X	
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 36	X			X					X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 46		X			X		X			X			X			X				X
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 36	X			X					X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 46		X			X		X			X			X			X				X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 46			X			X		X			X			X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 36	X			X					X			X			X			X	

18569632	4C-E5		0.50 - 0.50	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S			X						X				X			X			
				1kg TUB	S		X						X	X	X	X			X					X
18569443	4C-E2		0.70 - 0.70	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X			X	X	X	X			X					X
18569439	4C-E2		0.50 - 0.50	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X						X	X	X	X			X					X
18569560	3C-E5		2.00 - 2.00	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X	X	X	X	X	X	X			X					X
18569555	3C-E5		1.50 - 1.50	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X			X	X	X	X			X					X
18569551	3C-E5		0.50 - 0.50	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X						X	X	X	X			X					X
18569583	3C-D5-V		2.60 - 2.60	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
18569579	3C-D5		1.60 - 1.60	60g VOC (ALE215)	S																			X	

Validated

CERTIFICATE OF ANALYSIS

SDG: 181020-29 **Client Reference:** **Report Number:** 480661
Location: Llanwern **Order Number:** LLA492 **Superseded Report:** 479955

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	18569608			18569616			18569620		18569592			18569601			18569571			18569579	
			Customer Sample Reference	3C-B5			3C-B5			3C-B5-V		3C-C5			3C-C5			3C-D5			3C-D5	
			AGS Reference																			
			Depth (m)	0.50 - 0.50			1.00 - 1.00			1.40 - 1.40		0.50 - 0.50			1.00 - 1.00			0.80 - 0.80			1.60 - 1.60	
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 36		X			X					X			X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 46			X			X		X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 46			X			X		X			X			X			X			X
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 36		X			X					X			X			X			X	
pH	All	NDPs: 0 Tests: 46			X			X		X			X			X			X			X
pH Value of Filtered Water	All	NDPs: 0 Tests: 36		X			X					X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 46			X			X		X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 46			X			X		X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 46			X			X		X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 24						X								X			X			
Total Sulphur	All	NDPs: 0 Tests: 24						X								X			X			
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 36		X			X					X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 46			X			X		X			X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 46				X			X		X			X			X			X			

18569632	4C-E5		0.50 - 0.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X		
				1kg TUB	S	X			X		X							X			
18569443	4C-E2		0.70 - 0.70	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X		
				1kg TUB	S	X			X		X							X			
18569439	4C-E2		0.50 - 0.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X		
				1kg TUB	S	X			X		X							X			
18569560	3C-E5		2.00 - 2.00	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X		
				1kg TUB	S	X			X		X							X			
18569555	3C-E5		1.50 - 1.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X		
				1kg TUB	S	X			X		X							X			
18569551	3C-E5		0.50 - 0.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X		
				1kg TUB	S	X			X		X							X			
18569583	3C-D5-V		2.60 - 2.60	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X		
18569579	3C-D5		1.60 - 1.60	60g VOC (ALE215)	S																	X

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | | |

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18569636			18569575			18569624			18569400			18569462			18569525			18569566	
Customer Sample Reference			4C-E5			4C-E6			4C-E6			4C-E7			4C-E7			4C-E7			3C-E5-V	
AGS Reference																							
Depth (m)			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			1.40 - 1.40			3.40 - 3.40	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 46		X			X			X			X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 46		X			X			X			X			X			X			X	
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 36	X			X			X			X			X			X					
pH	All	NDPs: 0 Tests: 46		X			X			X			X			X			X			X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 36	X			X			X			X			X			X					
Phenols by HPLC (S)	All	NDPs: 0 Tests: 46		X			X			X			X			X			X			X	
Sample description	All	NDPs: 0 Tests: 46		X			X			X			X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 46		X			X			X			X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 24		X			X			X			X			X							
Total Sulphur	All	NDPs: 0 Tests: 24		X			X			X			X			X							
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 36	X			X			X			X			X			X					
TPH CWG GC (S)	All	NDPs: 0 Tests: 46		X			X			X			X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 46			X			X			X			X			X			X			

18569512	3C-G4		1.00 - 1.00	250g Amber Jar (ALE210)	S		x		x			x			x			x	x	x	x			x	
				1kg TUB	S					x			x									x			
18569504	3C-G4		0.50 - 0.50	60g VOC (ALE215)	S																				x
				250g Amber Jar (ALE210)	S		x		x			x			x			x	x	x				x	
				1kg TUB	S					x			x									x			
18569547	3C-F5-V		3.40 - 3.40	60g VOC (ALE215)	S																				x
				250g Amber Jar (ALE210)	S		x		x			x			x			x	x	x				x	
18569542	3C-F5		2.00 - 2.00	60g VOC (ALE215)	S																				x
				250g Amber Jar (ALE210)	S		x		x			x			x			x	x	x				x	
				1kg TUB	S					x			x									x			
18569538	3C-F5		1.00 - 1.00	60g VOC (ALE215)	S																				x
				250g Amber Jar (ALE210)	S		x		x			x			x			x	x	x	x	x		x	
				1kg TUB	S					x			x									x			
18569533	3C-F5		0.50 - 0.50	60g VOC (ALE215)	S																				x
				250g Amber Jar (ALE210)	S		x		x			x			x			x	x	x	x	x		x	
				1kg TUB	S					x			x									x			
18569628	4C-E6-V		2.00 - 2.00	60g VOC (ALE215)	S																				x
				250g Amber Jar (ALE210)	S		x		x			x			x			x						x	
18569646	4C-E5-V		2.00 - 2.00	60g VOC (ALE215)	S																				x
				250g Amber Jar (ALE210)	S		x		x			x			x			x						x	
18569566	3C-E5-V		3.40 - 3.40	60g VOC (ALE215)	S																				x

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18569512	18569520			18569447			18569451			18569455			18569415			18569420	
Customer Sample Reference			3C-G4	3C-G4			3C-G5			3C-G5			3C-G5			4C-G8			4C-G8	
AGS Reference																				
Depth (m)			1.00 - 1.00	2.00 - 2.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			0.50 - 0.50			1.00 - 1.00	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 24			X			X					X				X			X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 36		X			X			X				X		X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 24			X			X					X				X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 24		X			X							X		X			X		
CEN Readings	All	NDPs: 0 Tests: 36		X			X			X				X		X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 82		X	X		X	X		X	X		X	X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 36		X			X			X				X		X			X		
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 36		X			X			X				X		X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 36		X			X			X				X		X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 46	X			X			X			X			X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 36		X			X			X				X		X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 36		X			X			X				X		X			X		

18569484	3C-J3		2.00 - 2.00	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
18569480	3C-J3		1.50 - 1.50	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
18569476	3C-J3		0.50 - 0.50	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S			X				X			X		X						
				1kg TUB	S		X				X	X	X	X		X				X		X	X
18569500	3C-I3		1.50 - 1.50	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
18569496	3C-I3		0.50 - 0.50	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X						
				1kg TUB	S		X			X	X	X	X	X		X				X		X	X
18569427	4C-G8-V		2.60 - 2.60	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S			X				X			X		X						
18569469	3C-G5-V		3.00 - 3.00	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S			X				X			X		X						
18569529	3C-G4-V		3.10 - 3.10	60g VOC (ALE215)	S															X			
				250g Amber Jar (ALE210)	S			X				X			X		X						

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18569512	18569520			18569447			18569451			18569455			18569415			18569420	
Customer Sample Reference			3C-G4	3C-G4			3C-G5			3C-G5			3C-G5			4C-G8			4C-G8	
AGS Reference																				
Depth (m)			1.00 - 1.00	2.00 - 2.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			0.50 - 0.50			1.00 - 1.00	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	400g Tub (ALE214)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
PAH by GCMS	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 36		X			X			X				X		X			X		
pH	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 36		X			X			X				X		X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
Sample description	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
Total Sulphate	All	NDPs: 0 Tests: 24			X			X					X				X			X	
Total Sulphur	All	NDPs: 0 Tests: 24			X			X					X				X			X	
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 36		X			X			X				X		X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 46			X			X			X		X				X			X	
VOC MS (S)	All	NDPs: 0 Tests: 46	X			X			X			X			X			X				X

| 18569484 | 3C-J3 | | 2.00 - 2.00 | 60g VOC (ALE215) | 250g Amber Jar (ALE210) | 1kg TUB

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18569492		18569431			18569435		
Customer Sample Reference			3C-J3-V		4C-K2			4C-K2		
AGS Reference										
Depth (m)			3.40 - 3.40		0.50 - 0.50			1.00 - 1.00		
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 24				X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 36			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 46	X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 24				X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 24			X					
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2			X					
CEN Readings	All	NDPs: 0 Tests: 36			X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 82	X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 36			X			X		
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 36			X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 46	X			X			X	
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 36			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 46	X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 46		X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 36			X			X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18569492		18569431			18569435		
Customer Sample Reference			3C-J3-V		4C-K2			4C-K2		
AGS Reference										
Depth (m)			3.40 - 3.40		0.50 - 0.50			1.00 - 1.00		
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 36			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 46	X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 46	X			X			X	
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 36			X			X		
pH	All	NDPs: 0 Tests: 46	X			X			X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 36			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 46	X			X			X	
Sample description	All	NDPs: 0 Tests: 46	X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 46	X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 24				X				
Total Sulphur	All	NDPs: 0 Tests: 24				X				
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 36			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 46	X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 46		X			X			X

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18569608	3C-B5	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18569616	3C-B5	1.00 - 1.00	Dark Brown	Stone/Soil	Vegetation	Stones
18569620	3C-B5-V	1.40 - 1.40	Dark Brown	Sandy Loam	Vegetation	Stones
18569592	3C-C5	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18569601	3C-C5	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18569571	3C-D5	0.80 - 0.80	Dark Brown	Sandy Loam	Vegetation	Stones
18569579	3C-D5	1.60 - 1.60	Dark Brown	Stone/Soil	Stones	None
18569583	3C-D5-V	2.60 - 2.60	Dark Brown	Sandy Clay Loam	Vegetation	Stones
18569551	3C-E5	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18569555	3C-E5	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	Vegetation
18569560	3C-E5	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	Vegetation
18569439	4C-E2	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
18569443	4C-E2	0.70 - 0.70	Dark Brown	Stone/Soil	None	Stones
18569632	4C-E5	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
18569636	4C-E5	1.00 - 1.00	Dark Brown	Sand	Vegetation	Stones
18569575	4C-E6	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18569624	4C-E6	1.00 - 1.00	Dark Brown	Stone/Soil	Vegetation	Stones
18569400	4C-E7	0.50 - 0.50	Dark Brown	Stone/Soil	Vegetation	Stones
18569462	4C-E7	1.00 - 1.00	Dark Brown	Stone/Soil	Vegetation	Stones
18569525	4C-E7	1.40 - 1.40	Dark Brown	Loamy Sand	Stones	N/A
18569566	3C-E5-V	3.40 - 3.40	Dark Brown	Silty Clay Loam	Vegetation	Stones
18569646	4C-E5-V	2.00 - 2.00	Dark Brown	Clay	Vegetation	Stones
18569628	4C-E6-V	2.00 - 2.00	Dark Brown	Sandy Clay Loam	None	None
18569533	3C-F5	0.50 - 0.50	Dark Brown	Stone/Soil	Vegetation	Stones
18569538	3C-F5	1.00 - 1.00	Dark Brown	Stone/Soil	Vegetation	Stones
18569542	3C-F5	2.00 - 2.00	Black	Sand	Stones	N/A
18569547	3C-F5-V	3.40 - 3.40	Dark Brown	Sandy Clay Loam	Stones	Vegetation
18569504	3C-G4	0.50 - 0.50	Light Brown	Sandy Clay	Stones	Vegetation
18569512	3C-G4	1.00 - 1.00	Black	Sand	Stones	None
18569520	3C-G4	2.00 - 2.00	Dark Brown	Stone/Soil	Vegetation	Stones
18569447	3C-G5	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
18569451	3C-G5	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	None
18569455	3C-G5	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	None
18569415	4C-G8	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18569420	4C-G8	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Vegetation
18569529	3C-G4-V	3.10 - 3.10	Dark Brown	Clay	Vegetation	Stones
18569469	3C-G5-V	3.00 - 3.00	Grey	Clay	Stones	Vegetation
18569427	4C-G8-V	2.60 - 2.60	Dark Brown	Clay	Vegetation	Stones

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

			Colour	Description	Inclusions	Inclusions 2
18569496	3C-I3	0.50 - 0.50	Dark Brown	Stone/Soil	Vegetation	Stones
18569500	3C-I3	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	Vegetation
18569476	3C-J3	0.50 - 0.50	Black	Loamy Sand	Stones	Vegetation
18569480	3C-J3	1.50 - 1.50	Dark Brown	Sandy Loam	Vegetation	Stones
18569484	3C-J3	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	None
18569492	3C-J3-V	3.40 - 3.40	Dark Brown	Silty Clay	Vegetation	N/A
18569431	4C-K2	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
18569435	4C-K2	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			3C-B5	0.50 - 0.50	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569608	
			3C-B5	1.00 - 1.00	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569616	
			3C-B5-V	1.40 - 1.40	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569620	
			3C-C5	0.50 - 0.50	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569592	
			3C-C5	1.00 - 1.00	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569601	
			3C-D5	0.80 - 0.80	Soil/Solid (S)	18/10/2018	00:00	20/10/2018	181020-29	18569571	
Moisture Content Ratio (% of as received sample)	%	PM024	12	14	25	19	9.6	15			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 #	226 M	<12 M	<12 M	15.1 M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M	0.0116 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M			
Cresols	<0.01 mg/kg	TM062 (S)	0.0113 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 M			
Sulphur, Total	<0.02 %	TM132		0.401			0.298	0.219			
Sulphate, Total potential	<0.06 %	TM132		1.2			0.894	0.657			
Soil Organic Matter (SOM)	<0.35 %	TM132	6.74 #	3.03 #	2.31 #	19.7 #	7.84 #	12.6 #			
pH	1 pH Units	TM133	8.79 M	11 #	7.96 M	8.4 M	11.3 M	8.41 M			
Cyanide, Total	<1 mg/kg	TM153	1.98 & M	2.01 #	<1 M	8.51 M	18.7 & M	<1 M			
Cyanide, Free	<1 mg/kg	TM153	<1 & M	<1 #	<1 M	<1 M	<1 & M	<1 M			
Arsenic	<0.6 mg/kg	TM181	9 M	12.2 #	12.6 M	19.3 M	9.45 M	9.01 M			
Cadmium	<0.02 mg/kg	TM181	<0.02 M	<0.2 #	<0.02 M	10.1 M	1.9 M	0.192 M			
Chromium	<0.9 mg/kg	TM181	170 M	174 #	30.3 M	115 M	204 M	45 M			
Copper	<1.4 mg/kg	TM181	18.8 M	57 #	18.4 M	44.9 M	69 M	23 M			
Iron	<1000 mg/kg	TM181	113000 #	245000 #	45300 #	175000 #	252000 #	51100 #			
Lead	<0.7 mg/kg	TM181	81.5 M	54.6 #	26.9 M	1320 M	190 M	84.5 M			
Manganese	<0.13 mg/kg	TM181	10700 M	19800 #	1220 M	10700 M	17900 M	3250 M			
Mercury	<0.14 mg/kg	TM181	<0.14 M	<1.4 #	<0.14 M	<1.4 M	<1.4 M	<0.14 M			
Nickel	<0.2 mg/kg	TM181	13.9 M	38.4 #	31.9 M	40.2 M	59.9 M	19.7 M			
Selenium	<1 mg/kg	TM181	5.13 #	<10 #	<1 #	<10 #	<10 #	1.45 #			
Vanadium	<0.2 mg/kg	TM181	231 #	275 #	53 #	195 #	399 #	67.7 #			
Zinc	<1.9 mg/kg	TM181	492 M	302 #	127 M	5610 M	749 M	300 M			
Sulphate, acid soluble (total)	<0.02 %	TM221		0.759			0.932	0.119			
Calcium	<21 mg/kg	TM224		135000			132000	83400			
Magnesium	<8 mg/kg	TM224		10200			8300	17900			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.239 #			0.294 M	0.114 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-D5	3C-D5-V	3C-E5	3C-E5	3C-E5	4C-E2
			Depth (m)	1.60 - 1.60	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569579	18569583	18569551	18569555	18569560	18569439
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	24	11	5.4	5.5	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	185 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M	0.0211 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	0.0112 M	0.0211 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 M	<0.035 M	0.0423 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132					0.2	0.302	
Sulphate, Total potential	<0.06 %	TM132					0.6	0.906	
Soil Organic Matter (SOM)	<0.35 %	TM132		2.88 #	2.05 #	3.57 #	0.984 #	<0.35 #	3.55 #
pH	1 pH Units	TM133		12 #	8.32 M	8.12 M	12.2 M	10.9 M	11.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 & #	<1 & M	<1 M	<1 & M	<1 & M	<1 & M
Cyanide, Free	<1 mg/kg	TM153		<1 & #	<1 & M	<1 M	<1 & M	<1 & M	<1 & M
Arsenic	<0.6 mg/kg	TM181		12.9 #	10.6 M	10.4 M	<6 M	<6 M	9.91 M
Cadmium	<0.02 mg/kg	TM181		<0.02 #	<0.02 M	<0.02 M	0.5 M	1.06 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		318 #	38.8 M	58.1 M	636 M	623 M	55.2 M
Copper	<1.4 mg/kg	TM181		8.21 #	17.6 M	17 M	<14 M	26.9 M	31.3 M
Iron	<1000 mg/kg	TM181		106000 #	38300 #	39100 #	136000 #	175000 #	174000 #
Lead	<0.7 mg/kg	TM181		21.5 #	30.6 M	27 M	17.8 M	16.3 M	165 M
Manganese	<0.13 mg/kg	TM181		26000 #	1200 M	3020 M	37700 M	37200 M	8680 M
Mercury	<0.14 mg/kg	TM181		<0.14 #	<0.14 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		5.25 #	30.2 M	20.7 M	11.3 M	27.2 M	46.3 M
Selenium	<1 mg/kg	TM181		8.45 #	<1 #	1.45 #	10.8 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		307 #	60.3 #	105 #	940 #	1180 #	231 #
Zinc	<1.9 mg/kg	TM181		66 #	126 M	113 M	<190 M	45.4 M	574 M
Sulphate, acid soluble (total)	<0.02 %	TM221					0.314	0.495	
Calcium	<21 mg/kg	TM224					247000	255000	
Magnesium	<8 mg/kg	TM224					7750	<800	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243					0.0438 M	0.289 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						N/C	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-E2	4C-E5	4C-E5	4C-E6	4C-E6	4C-E7
			Depth (m)	0.70 - 0.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569443	18569632	18569636	18569575	18569624	18569400
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5.1	7.7	8.5	10	7.5	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	<12 M	<12 M	<12 #	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 #	0.0113 & #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 #	<0.01 & #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 #	<0.015 & #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 #	<0.035 & #
Sulphur, Total	<0.02 %	TM132		0.189		0.185	0.125	0.262	0.307
Sulphate, Total potential	<0.06 %	TM132		0.567		0.555	0.375	0.786	0.921
Soil Organic Matter (SOM)	<0.35 %	TM132		1.3 #	4.86 #	3.09 #	4.29 #	0.771 #	3.28 #
pH	1 pH Units	TM133		12.1 #	8.57 M	9.96 M	10.1 M	9.86 #	10.1 #
Cyanide, Total	<1 mg/kg	TM153		<1 & #	<1 M	<1 M	<1 M	<1 #	<1 #
Cyanide, Free	<1 mg/kg	TM153		<1 & #	<1 M	<1 M	<1 M	<1 #	<1 #
Arsenic	<0.6 mg/kg	TM181		<6 #	8.8 M	8.51 M	<6 M	6.99 #	13.7 #
Cadmium	<0.02 mg/kg	TM181		1.3 #	<0.2 M	1.68 M	1.62 M	<0.2 #	1.01 #
Chromium	<0.9 mg/kg	TM181		359 #	26 M	<9 M	84.6 M	<9 #	<9 #
Copper	<1.4 mg/kg	TM181		<14 #	14.9 M	17.4 M	<14 M	<14 #	23.3 #
Iron	<1000 mg/kg	TM181		225000 #	159000 #	184000 #	193000 #	387000 #	212000 #
Lead	<0.7 mg/kg	TM181		9.38 #	42.9 M	80.1 M	51.2 M	<7 #	42 #
Manganese	<0.13 mg/kg	TM181		40600 #	13300 M	11600 M	12300 M	3130 #	10500 #
Mercury	<0.14 mg/kg	TM181		<1.4 #	<1.4 M	<1.4 M	<1.4 M	<1.4 #	<1.4 #
Nickel	<0.2 mg/kg	TM181		9.19 #	22 M	32.8 M	33.4 M	13.5 #	26.6 #
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		1020 #	109 #	111 #	221 #	51.1 #	90.4 #
Zinc	<1.9 mg/kg	TM181		<19 #	132 M	202 M	159 M	56.1 #	<190 #
Sulphate, acid soluble (total)	<0.02 %	TM221		0.407		0.368	0.412	0.325	0.413
Calcium	<21 mg/kg	TM224		316000		64800	116000	51200	49800
Magnesium	<8 mg/kg	TM224		11800		8770	16100	8960	7810
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.046 #		0.317 M	0.141 M	0.257 #	0.471 #

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-E7	4C-E7	3C-E5-V	4C-E5-V	4C-E6-V	3C-F5
			Depth (m)	1.00 - 1.00	1.40 - 1.40	3.40 - 3.40	2.00 - 2.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569462	18569525	18569566	18569646	18569628	18569533
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.5	12	23	23	23	16
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	154 M	166 M	81.7 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		0.0111 #	0.0114 & M	<0.01 M	<0.01 & M	<0.01 M	<0.01 #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 & M	<0.01 M	<0.01 & M	<0.01 M	<0.01 #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 & M	<0.015 M	<0.015 & M	<0.015 M	<0.015 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 & M	<0.035 M	<0.035 & M	<0.035 M	<0.035 #
Sulphur, Total	<0.02 %	TM132		0.196					0.109
Sulphate, Total potential	<0.06 %	TM132		0.588					0.327
Soil Organic Matter (SOM)	<0.35 %	TM132		1.63 #	1.24 #	1.26 #	1.08 #	1.1 #	5.02 #
pH	1 pH Units	TM133		10.5 #	10.9 M	9.1 M	7.82 M	8.23 M	8.14 #
Cyanide, Total	<1 mg/kg	TM153		<1 #	<1 M	<1 & M	<1 M	<1 & M	<1 #
Cyanide, Free	<1 mg/kg	TM153		<1 #	<1 M	<1 & M	<1 M	<1 & M	<1 #
Arsenic	<0.6 mg/kg	TM181		25.7 #	20.8 M	12.8 M	14.4 M	12.2 M	7.96 #
Cadmium	<0.02 mg/kg	TM181		1.25 #	<0.2 M	<0.02 M	<0.02 M	<0.02 M	0.902 #
Chromium	<0.9 mg/kg	TM181		<9 #	<9 M	30.9 M	34.6 M	30.8 M	39.3 #
Copper	<1.4 mg/kg	TM181		103 #	75.7 M	10.6 M	10.4 M	10 M	24.2 #
Iron	<1000 mg/kg	TM181		315000 #	395000 #	33900 #	43300 #	32200 #	21400 #
Lead	<0.7 mg/kg	TM181		98.4 #	50.7 M	20.9 M	29 M	23.4 M	50.3 #
Manganese	<0.13 mg/kg	TM181		6280 #	11300 M	892 M	315 M	735 M	3170 #
Mercury	<0.14 mg/kg	TM181		<1.4 #	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 #
Nickel	<0.2 mg/kg	TM181		31.7 #	24.5 M	35.5 M	40.6 M	33.7 M	18.4 #
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<1 #	<1 #	<1 #	1.18 #
Vanadium	<0.2 mg/kg	TM181		143 #	171 #	58.2 #	61.4 #	53.3 #	45.8 #
Zinc	<1.9 mg/kg	TM181		261 #	<190 M	91.7 M	123 M	102 M	181 #
Sulphate, acid soluble (total)	<0.02 %	TM221		0.433					0.0901
Calcium	<21 mg/kg	TM224		54800					114000
Magnesium	<8 mg/kg	TM224		5970					23400
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.205 #					0.0351 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-F5	3C-F5	3C-F5-V	3C-G4	3C-G4	3C-G4
			Depth (m)	1.00 - 1.00	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569538	18569542	18569547	18569504	18569512	18569520
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.7	9.1	20	19	9.5	6.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	154 M	<12 M	<12 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		0.0108 #	0.066 & M	<0.01 M	<0.01 M	<0.01 & M	0.0107 #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	0.022 & M	<0.01 M	<0.01 M	<0.01 & M	<0.01 #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 & M	<0.015 M	<0.015 M	<0.015 & M	<0.015 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	0.088 & M	<0.035 M	<0.035 M	<0.035 & M	<0.035 #
Sulphur, Total	<0.02 %	TM132		0.383				0.397	0.398
Sulphate, Total potential	<0.06 %	TM132		1.15				1.19	1.19
Soil Organic Matter (SOM)	<0.35 %	TM132		4.57 #	11.3 #	1.09 #	2.69 #	50.3 #	11 #
pH	1 pH Units	TM133		12.8 #	13 M	8.42 M	8.42 M	11.7 M	12.9 #
Cyanide, Total	<1 mg/kg	TM153		1.21 #	2.96 M	<1 M	<1 M	1.13 M	<1 #
Cyanide, Free	<1 mg/kg	TM153		<1 #	<1 M	<1 M	<1 M	<1 M	<1 #
Arsenic	<0.6 mg/kg	TM181		7.96 #	<6 M	13.5 M	12.7 M	<6 M	<6 #
Cadmium	<0.02 mg/kg	TM181		0.89 #	<0.2 M	<0.02 M	0.201 M	0.67 M	<0.2 #
Chromium	<0.9 mg/kg	TM181		592 #	430 M	34.6 M	28.7 M	166 M	680 #
Copper	<1.4 mg/kg	TM181		28.8 #	28.3 M	9.84 M	15.4 M	<14 M	17.9 #
Iron	<1000 mg/kg	TM181		163000 #	149000 #	31200 #	23800 #	57200 #	144000 #
Lead	<0.7 mg/kg	TM181		36 #	39.8 M	21.3 M	49.4 M	23.1 M	7.14 #
Manganese	<0.13 mg/kg	TM181		31300 #	26300 M	657 M	784 M	15600 M	35900 #
Mercury	<0.14 mg/kg	TM181		<1.4 #	<1.4 M	<0.14 M	<0.14 M	<1.4 M	<1.4 #
Nickel	<0.2 mg/kg	TM181		26.5 #	31.8 M	33.7 M	31.6 M	7.27 M	11.6 #
Selenium	<1 mg/kg	TM181		10 #	17.6 #	<1 #	<1 #	<10 #	18.1 #
Vanadium	<0.2 mg/kg	TM181		970 #	880 #	60.4 #	50.8 #	194 #	578 #
Zinc	<1.9 mg/kg	TM181		<190 #	118 M	86.3 M	153 M	24.8 M	37.5 #
Sulphate, acid soluble (total)	<0.02 %	TM221		0.597				0.334	0.456
Calcium	<21 mg/kg	TM224		191000				111000	237000
Magnesium	<8 mg/kg	TM224		9860				15600	9810
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0276 #				0.0868 M	0.0236 #

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5	3C-G5	3C-G5	4C-G8	4C-G8	3C-G4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	3.10 - 3.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569447	18569451	18569455	18569415	18569420	18569529
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.6	5	6.9	10	11	21
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	164 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0214 M	0.021 M	0.0215 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0107 M	0.0105 M	0.0108 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.214		0.191	0.218	0.146	
Sulphate, Total potential	<0.06 %	TM132		0.642		0.573	0.654	0.438	
Soil Organic Matter (SOM)	<0.35 %	TM132		2.93 #	20.2 #	7.05 #	3.62 #	4.76 #	1.09 ♦#
pH	1 pH Units	TM133		12.3 M	12.9 M	12.6 M	11.8 M	9.55 M	8.93 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.17 M	<1 M	<1 & M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 & M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	<6 M	<6 M	7.92 M	12.1 M	12.6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	0.808 M	<0.02 M	1.74 M	0.204 M
Chromium	<0.9 mg/kg	TM181		537 M	743 M	760 M	38.3 M	46.4 M	44 M
Copper	<1.4 mg/kg	TM181		<14 M	16.5 M	<14 M	9.56 M	40.3 M	11.3 M
Iron	<1000 mg/kg	TM181		152000 #	165000 #	142000 #	87500 #	218000 #	25900 #
Lead	<0.7 mg/kg	TM181		11.8 M	25 M	13.3 M	14.7 M	91.1 M	34.5 M
Manganese	<0.13 mg/kg	TM181		31000 M	40700 M	47200 M	8620 M	9290 M	791 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		8.47 M	7.75 M	9.41 M	11.2 M	28.4 M	36.1 M
Selenium	<1 mg/kg	TM181		11.9 #	22.6 #	13.3 #	2.08 #	<10 #	<1 #
Vanadium	<0.2 mg/kg	TM181		364 #	635 #	865 #	169 #	120 #	64.5 #
Zinc	<1.9 mg/kg	TM181		131 M	<190 M	50 M	60.7 M	151 M	129 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.305		0.445	0.537	0.371	
Calcium	<21 mg/kg	TM224		192000		238000	219000	94400	
Magnesium	<8 mg/kg	TM224		38100		22000	17600	10900	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.052 M		0.0222 M	0.237 M	0.199 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5-V	4C-G8-V	3C-I3	3C-I3	3C-J3	3C-J3
			Depth (m)	3.00 - 3.00	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569469	18569427	18569496	18569500	18569476	18569480
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		31	23	7.8	6.1	18	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	188 M	<12 #	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 & M	<0.01 & M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0109 #	<0.01 M	0.0244 & M	0.0112 & M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 & M	<0.015 & M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 & M	<0.035 & M
Sulphur, Total	<0.02 %	TM132				0.461	0.0738		0.4
Sulphate, Total potential	<0.06 %	TM132				1.38	0.221		1.2
Soil Organic Matter (SOM)	<0.35 %	TM132		4.21 ♦ #	2 ♦ #	19 #	<0.35 & #	28.3 #	2.57 #
pH	1 pH Units	TM133		8.46 M	7.71 M	12.7 #	12.4 M	8.62 M	11.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 & M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 & M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		12.5 M	13.1 M	2.93 #	<6 M	8.18 M	<6 M
Cadmium	<0.02 mg/kg	TM181		0.363 M	0.332 M	<0.02 #	<0.2 M	<0.02 M	0.765 M
Chromium	<0.9 mg/kg	TM181		41.6 M	30.9 M	192 #	554 M	57 M	416 M
Copper	<1.4 mg/kg	TM181		20.4 M	13.6 M	3.28 #	<14 M	13.5 M	<14 M
Iron	<1000 mg/kg	TM181		25200 #	26800 #	98400 #	176000 #	79400 #	97800 #
Lead	<0.7 mg/kg	TM181		34.1 M	50 M	5.52 #	<7 M	48.3 M	19.3 M
Manganese	<0.13 mg/kg	TM181		590 M	498 M	20000 #	36900 M	4630 M	25900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 #	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		30.2 M	40.6 M	4.3 #	10.4 M	13.8 M	12 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	5.24 #	13.1 #	1.99 #	<10 #
Vanadium	<0.2 mg/kg	TM181		61.8 #	59.8 #	198 #	394 #	185 #	284 #
Zinc	<1.9 mg/kg	TM181		123 M	187 M	55.2 #	67.4 M	203 M	62.9 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.491	0.19		0.912
Calcium	<21 mg/kg	TM224				182000	205000		219000
Magnesium	<8 mg/kg	TM224				34200	41100		32100
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.0697 #	0.0099 M		0.15 M

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J3	3C-J3-V	4C-K2	4C-K2		
			Depth (m)	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018		
			SDG Ref	181020-29	181020-29	181020-29	181020-29		
			Lab Sample No.(s)	18569484	18569492	18569431	18569435		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6	29	11	7.4		
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	185 M	<12 M	<12 M		
Phenol	<0.01 mg/kg	TM062 (S)		0.0213 M	<0.01 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M		
Sulphur, Total	<0.02 %	TM132		1.05		0.14			
Sulphate, Total potential	<0.06 %	TM132		3.15		0.42			
Soil Organic Matter (SOM)	<0.35 %	TM132		10.1 #	2.93 ♦ #	4.97 #	3.33 #		
pH	1 pH Units	TM133		10.8 M	8.49 M	11.4 M	11.2 M		
Cyanide, Total	<1 mg/kg	TM153		<1 & M	<1 M	<1 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153		<1 & M	<1 M	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		2.12 M	12.9 M	9.24 M	5.93 M		
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.343 M	0.0834 M	0.144 M		
Chromium	<0.9 mg/kg	TM181		76.3 M	38.7 M	51.8 M	8.4 M		
Copper	<1.4 mg/kg	TM181		2.22 M	20.5 M	27.8 M	8.04 M		
Iron	<1000 mg/kg	TM181		33200 #	31400 #	63600 #	27900 #		
Lead	<0.7 mg/kg	TM181		5.54 M	45.1 M	71.3 M	55.5 M		
Manganese	<0.13 mg/kg	TM181		13600 M	998 M	3270 M	873 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		1.96 M	34.3 M	20.2 M	9.13 M		
Selenium	<1 mg/kg	TM181		6.09 #	<1 #	<1 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		94.6 #	71 #	64.7 #	21.3 #		
Zinc	<1.9 mg/kg	TM181		28.5 M	146 M	244 M	90 M		
Sulphate, acid soluble (total)	<0.02 %	TM221		0.795		0.267			
Calcium	<21 mg/kg	TM224		211000		181000			
Magnesium	<8 mg/kg	TM224		27200		12400			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.144 M		0.167 M			
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				<0.001 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #			
Additional Asbestos Components (Using TM048)		TM304				None #			
Analysts Comments		TM304				N/C			
Asbestos Quantification - Total - %	<0.001 %	TM304				<0.001 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B5	3C-B5	3C-B5-V	3C-C5	3C-C5	3C-D5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569608	18569616	18569620	18569592	18569601	18569571
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97.1	93.7	95.5	94.4	91.3	104
Acenaphthene-d10 % recovery**	%	TM218		91.8	90.5	96.1	93.6	92.2	103
Phenanthrene-d10 % recovery**	%	TM218		90.2	90.1	97	94.1	93.3	102
Chrysene-d12 % recovery**	%	TM218		85.6	87	93.1	87.2	87.6	92.4
Perylene-d12 % recovery**	%	TM218		96.4	90.9	91.5	75.6	89	92.9
Naphthalene	<0.009 mg/kg	TM218		11.9 M	0.498 #	<0.009 M	0.387 M	0.162 M	1.33 M
Acenaphthylene	<0.012 mg/kg	TM218		4.04 M	0.131 #	<0.012 M	0.535 M	0.194 M	4.02 M
Acenaphthene	<0.008 mg/kg	TM218		0.913 M	0.156 #	<0.008 M	0.0279 M	0.0958 M	0.101 M
Fluorene	<0.01 mg/kg	TM218		7.45 M	0.123 #	<0.01 M	0.238 M	0.101 M	0.59 M
Phenanthrene	<0.015 mg/kg	TM218		101 M	1.47 #	<0.015 M	1.8 M	1.17 M	5.31 M
Anthracene	<0.016 mg/kg	TM218		17.6 M	0.372 #	<0.016 M	0.531 M	0.375 M	2.83 M
Fluoranthene	<0.017 mg/kg	TM218		197 M	3.67 #	0.0282 M	4.37 M	3.65 M	27.8 M
Pyrene	<0.015 mg/kg	TM218		133 M	3.69 #	0.0262 M	3.23 M	3.34 M	21.7 M
Benz(a)anthracene	<0.014 mg/kg	TM218		63.6 M	2.85 #	0.0224 M	2.12 M	2.68 M	14.8 M
Chrysene	<0.01 mg/kg	TM218		58.9 M	3.22 #	0.0233 M	1.48 M	3.01 M	12.2 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		88.1 M	5.31 #	0.036 M	2.36 M	4.65 M	18.9 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		28.9 M	2.06 #	<0.014 M	1.01 M	1.94 M	6.95 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		58.7 M	3.76 #	0.0244 M	1.79 M	3.51 M	14.7 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		50.6 M	2.91 #	<0.018 M	1.18 M	2.3 M	9.99 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		10.2 M	0.648 #	<0.023 M	0.334 M	0.374 M	2.69 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		42.7 M	2.59 #	<0.024 M	1.3 M	2.48 M	10.5 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		875	33.5	0.161	22.7	30	154

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-D5	3C-D5-V	3C-E5	3C-E5	3C-E5	4C-E2
			Depth (m)	1.60 - 1.60	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569579	18569583	18569551	18569555	18569560	18569439
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.8	90.2	79.6	79.2	80.7	87.7
Acenaphthene-d10 % recovery**	%	TM218		89.7	93.4	91.7	84.9	88.2	91.3
Phenanthrene-d10 % recovery**	%	TM218		87.9	95.7	96.7	87.8	90.1	92.3
Chrysene-d12 % recovery**	%	TM218		91.9	86.3	78.5	78	81.2	85.4
Perylene-d12 % recovery**	%	TM218		87	79.1	71	77.9	70	75.1
Naphthalene	<0.009 mg/kg	TM218		<0.045 #	<0.009 M	0.03 M	0.0273 M	0.0493 M	0.106 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.06 #	<0.012 M	0.0144 M	<0.012 M	0.0162 M	0.0215 M
Acenaphthene	<0.008 mg/kg	TM218		<0.04 #	<0.008 M	0.0246 M	0.00874 M	<0.008 M	0.0371 M
Fluorene	<0.01 mg/kg	TM218		<0.05 #	<0.01 M	0.016 M	<0.01 M	<0.01 M	0.0473 M
Phenanthrene	<0.015 mg/kg	TM218		0.914 #	0.0422 M	0.184 M	0.241 M	0.194 M	0.389 M
Anthracene	<0.016 mg/kg	TM218		0.142 #	<0.016 M	0.0443 M	0.0173 M	0.039 M	0.139 M
Fluoranthene	<0.017 mg/kg	TM218		2.68 #	0.102 M	0.45 M	0.375 M	0.653 M	0.641 M
Pyrene	<0.015 mg/kg	TM218		3.87 #	0.087 M	0.448 M	0.299 M	0.514 M	0.659 M
Benz(a)anthracene	<0.014 mg/kg	TM218		2.57 #	0.0483 M	0.327 M	0.221 M	0.293 M	0.354 M
Chrysene	<0.01 mg/kg	TM218		3.08 #	0.0512 M	0.349 M	0.34 M	0.401 M	0.395 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		3.87 #	0.0553 M	0.572 M	0.49 M	0.347 M	0.472 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.59 #	0.0207 M	0.208 M	0.171 M	0.107 M	0.194 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.81 #	0.0366 M	0.493 M	0.245 M	0.235 M	0.28 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.27 #	<0.018 M	0.402 M	0.206 M	0.159 M	0.188 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.293 #	<0.023 M	0.0859 M	0.075 M	0.0275 M	0.038 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.69 #	<0.024 M	0.36 M	0.368 M	0.167 M	0.206 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		23.8	0.443	4.01	3.08	3.2	4.17

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-E2	4C-E5	4C-E5	4C-E6	4C-E6	4C-E7
			Depth (m)	0.70 - 0.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569443	18569632	18569636	18569575	18569624	18569400
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81	84.9	82	96.9	84.6	82.8
Acenaphthene-d10 % recovery**	%	TM218		85.4	87.6	89.7	96.7	88.5	86.8
Phenanthrene-d10 % recovery**	%	TM218		86.7	95.7	92.7	99.5	93.4	90.7
Chrysene-d12 % recovery**	%	TM218		79	93.1	83.7	99	98.6	85.6
Perylene-d12 % recovery**	%	TM218		80.6	90.7	71.9	97.8	92.8	81.6
Naphthalene	<0.009 mg/kg	TM218		0.0103 #	0.262 M	0.15 M	0.193 M	0.0261 #	0.0211 #
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 #	0.131 M	0.0716 M	0.162 M	0.0191 #	<0.012 #
Acenaphthene	<0.008 mg/kg	TM218		0.0215 #	0.0346 M	0.014 M	0.0283 M	<0.008 #	0.0144 #
Fluorene	<0.01 mg/kg	TM218		<0.01 #	0.0771 M	0.036 M	0.0836 M	0.0144 #	0.0115 #
Phenanthrene	<0.015 mg/kg	TM218		0.206 #	0.768 M	0.445 M	0.644 M	0.0914 #	0.117 #
Anthracene	<0.016 mg/kg	TM218		0.037 #	0.22 M	0.106 M	0.191 M	0.0318 #	0.0227 #
Fluoranthene	<0.017 mg/kg	TM218		0.645 #	1.33 M	0.803 M	1.14 M	0.189 #	0.194 #
Pyrene	<0.015 mg/kg	TM218		0.604 #	1.07 M	0.626 M	1.01 M	0.207 #	0.154 #
Benz(a)anthracene	<0.014 mg/kg	TM218		0.359 #	0.776 M	0.357 M	0.675 M	0.114 #	0.0693 #
Chrysene	<0.01 mg/kg	TM218		0.369 #	0.645 M	0.42 M	0.632 M	0.124 #	0.0653 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.478 #	0.857 M	0.517 M	0.882 M	0.172 #	0.0819 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.188 #	0.291 M	0.17 M	0.291 M	0.0709 #	0.0287 #
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.474 #	0.67 M	0.262 M	0.626 M	0.0947 #	0.0503 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.356 #	0.749 M	0.245 M	0.387 M	0.0854 #	0.0511 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.05 #	0.11 M	0.0425 M	0.0996 M	<0.023 #	<0.023 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.426 #	0.493 M	0.246 M	0.473 M	0.0715 #	0.0428 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		4.22	8.49	4.51	7.52	1.31	0.923

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-E7	4C-E7	3C-E5-V	4C-E5-V	4C-E6-V	3C-F5
			Depth (m)	1.00 - 1.00	1.40 - 1.40	3.40 - 3.40	2.00 - 2.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569462	18569525	18569566	18569646	18569628	18569533
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.2	81.9	80.1	96.6	79.1	89.3
Acenaphthene-d10 % recovery**	%	TM218		89.5	88	91	95.9	83.1	93.8
Phenanthrene-d10 % recovery**	%	TM218		93	89.9	96.7	97.4	85.5	95.6
Chrysene-d12 % recovery**	%	TM218		86.5	84.9	79.1	101	81.1	100
Perylene-d12 % recovery**	%	TM218		74	87.7	74.1	96.9	77.6	83
Naphthalene	<0.009 mg/kg	TM218		0.0507 #	0.0236 M	<0.009 M	<0.009 M	<0.009 M	<0.045 #
Acenaphthylene	<0.012 mg/kg	TM218		0.0629 #	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.06 #
Acenaphthene	<0.008 mg/kg	TM218		0.0532 #	0.0316 M	<0.008 M	<0.008 M	<0.008 M	<0.04 #
Fluorene	<0.01 mg/kg	TM218		0.0582 #	0.0184 M	<0.01 M	<0.01 M	<0.01 M	<0.05 #
Phenanthrene	<0.015 mg/kg	TM218		0.739 #	0.222 M	0.188 M	<0.015 M	<0.015 M	<0.075 #
Anthracene	<0.016 mg/kg	TM218		0.112 #	0.0354 M	0.0249 M	<0.016 M	<0.016 M	<0.08 #
Fluoranthene	<0.017 mg/kg	TM218		1.16 #	0.372 M	0.206 M	<0.017 M	<0.017 M	0.334 #
Pyrene	<0.015 mg/kg	TM218		0.8 #	0.284 M	0.146 M	<0.015 M	<0.015 M	0.275 #
Benz(a)anthracene	<0.014 mg/kg	TM218		0.508 #	0.0956 M	0.0626 M	<0.014 M	<0.014 M	0.192 #
Chrysene	<0.01 mg/kg	TM218		0.453 #	0.103 M	0.0795 M	<0.01 M	<0.01 M	0.239 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.542 #	0.0964 M	0.101 M	<0.015 M	<0.015 M	0.208 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.188 #	0.0408 M	0.0386 M	<0.014 M	<0.014 M	<0.07 #
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.298 #	0.0726 M	0.0384 M	<0.015 M	<0.015 M	0.134 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.201 #	0.0662 M	0.0521 M	<0.018 M	<0.018 M	<0.09 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0475 #	<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.115 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.204 #	0.075 M	0.0449 M	<0.024 M	<0.024 M	<0.12 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		5.47	1.54	0.982	<0.118	<0.118	1.38

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-F5	3C-F5	3C-F5-V	3C-G4	3C-G4	3C-G4
			Depth (m)	1.00 - 1.00	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569538	18569542	18569547	18569504	18569512	18569520
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.9	82.7	84.9	86.5	93.1	83.5
Acenaphthene-d10 % recovery**	%	TM218		90.5	87.4	86.1	84.5	96.4	92.1
Phenanthrene-d10 % recovery**	%	TM218		93.3	94.8	85.4	86.9	94.4	91.3
Chrysene-d12 % recovery**	%	TM218		87.6	98.3	83	80	76.2	85.5
Perylene-d12 % recovery**	%	TM218		99.1	92.8	80.3	81.3	66.7	73.8
Naphthalene	<0.009 mg/kg	TM218		0.231 #	0.301 M	<0.009 M	<0.009 M	0.782 M	0.292 #
Acenaphthylene	<0.012 mg/kg	TM218		0.1 #	0.411 M	<0.012 M	<0.012 M	0.289 M	0.0566 #
Acenaphthene	<0.008 mg/kg	TM218		0.107 #	0.163 M	<0.008 M	<0.008 M	0.0412 M	0.0774 #
Fluorene	<0.01 mg/kg	TM218		0.0611 #	0.107 M	<0.01 M	<0.01 M	0.429 M	0.0715 #
Phenanthrene	<0.015 mg/kg	TM218		5.58 #	18.1 M	<0.015 M	0.0632 M	1.98 M	7.44 #
Anthracene	<0.016 mg/kg	TM218		0.329 #	2.41 M	<0.016 M	<0.016 M	0.665 M	0.179 #
Fluoranthene	<0.017 mg/kg	TM218		6.74 #	21.6 M	0.0308 M	0.179 M	3.86 M	4.96 #
Pyrene	<0.015 mg/kg	TM218		5.76 #	17.2 M	0.0263 M	0.129 M	2.95 M	3.4 #
Benz(a)anthracene	<0.014 mg/kg	TM218		3.56 #	8.61 M	0.0186 M	0.0252 M	1.78 M	1.48 #
Chrysene	<0.01 mg/kg	TM218		4.05 #	8.94 M	0.0202 M	0.0268 M	1.72 M	1.9 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		6.68 #	11.1 M	0.0264 M	0.0296 M	2.74 M	1.94 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.87 #	5.93 M	<0.014 M	<0.014 M	0.991 M	0.726 #
Benzo(a)pyrene	<0.015 mg/kg	TM218		4.42 #	6.52 M	0.0197 M	0.0226 M	1.48 M	1.1 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		4.42 #	5.65 M	<0.018 M	<0.018 M	1.26 M	0.874 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.872 #	1.22 M	<0.023 M	<0.023 M	0.279 M	0.157 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		3.66 #	4.76 M	<0.024 M	<0.024 M	0.92 M	0.887 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		49.4	113	0.142	0.475	22.2	25.5

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5	3C-G5	3C-G5	4C-G8	4C-G8	3C-G4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	3.10 - 3.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569447	18569451	18569455	18569415	18569420	18569529
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		80.4	77.8	80	83.7	77.2	91.5
Acenaphthene-d10 % recovery**	%	TM218		84.8	85.1	84.5	88	83	90.7
Phenanthrene-d10 % recovery**	%	TM218		86.2	87.6	87.1	90.3	85.8	88.4
Chrysene-d12 % recovery**	%	TM218		88.8	72.8	76	88.1	78.2	85.1
Perylene-d12 % recovery**	%	TM218		80.2	73.4	77.5	76.3	76.7	78.9
Naphthalene	<0.009 mg/kg	TM218		0.727 M	1.62 M	0.512 M	0.205 M	0.111 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.307 M	1.56 M	0.364 M	0.125 M	<0.06 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0265 M	0.156 M	0.162 M	<0.04 M	<0.04 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.62 M	1.95 M	0.32 M	0.088 M	<0.05 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		3.51 M	8.02 M	3.01 M	0.791 M	0.359 M	0.136 M
Anthracene	<0.016 mg/kg	TM218		1.24 M	2.51 M	0.414 M	0.231 M	0.13 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		5.21 M	10.1 M	3.39 M	1.72 M	0.802 M	0.179 M
Pyrene	<0.015 mg/kg	TM218		3.51 M	7.19 M	2.52 M	1.54 M	0.778 M	0.142 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.89 M	3.8 M	1.34 M	0.889 M	0.406 M	0.0961 M
Chrysene	<0.01 mg/kg	TM218		2.07 M	3.51 M	1.22 M	1.01 M	0.374 M	0.106 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.24 M	4.29 M	1.59 M	1.24 M	0.517 M	0.11 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.919 M	1.75 M	0.645 M	0.418 M	0.185 M	0.0496 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.43 M	3.65 M	1.18 M	0.703 M	0.392 M	0.0739 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1 M	2.9 M	0.847 M	0.479 M	0.355 M	0.0466 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.226 M	0.472 M	0.149 M	<0.115 M	<0.115 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.746 M	2.59 M	0.828 M	0.578 M	0.338 M	0.0562 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		25.7	56	18.5	10	4.75	0.997

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5-V	4C-G8-V	3C-I3	3C-I3	3C-J3	3C-J3
			Depth (m)	3.00 - 3.00	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569469	18569427	18569496	18569500	18569476	18569480
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.7	88.8	97.9	79.8	91.6	96.7
Acenaphthene-d10 % recovery**	%	TM218		89.8	92.1	92	83.2	96.5	96.1
Phenanthrene-d10 % recovery**	%	TM218		89.2	92.1	85	86.5	96.4	94.1
Chrysene-d12 % recovery**	%	TM218		87.1	88.4	80.1	83.1	93	92.5
Perylene-d12 % recovery**	%	TM218		82.7	83.6	82.9	73.4	78.5	85.6
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	10 #	0.205 M	2.99 M	1.67 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.24 #	0.0449 M	0.616 M	0.423 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	3.6 #	<0.008 M	0.0925 M	0.0612 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	1.65 #	0.0137 M	0.436 M	0.269 M
Phenanthrene	<0.015 mg/kg	TM218		0.067 M	<0.015 M	6.37 #	0.377 M	2.99 M	2.73 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.927 #	0.0749 M	0.659 M	0.69 M
Fluoranthene	<0.017 mg/kg	TM218		0.0781 M	<0.017 M	2.41 #	0.494 M	2.96 M	3.67 M
Pyrene	<0.015 mg/kg	TM218		0.0656 M	<0.015 M	1.55 #	0.393 M	2.11 M	2.67 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0477 M	<0.014 M	0.36 #	0.204 M	1.35 M	1.61 M
Chrysene	<0.01 mg/kg	TM218		0.0494 M	<0.01 M	0.39 #	0.26 M	1.46 M	1.36 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0387 M	<0.015 M	0.391 #	0.266 M	1.8 M	1.5 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	<0.28 #	0.0946 M	0.612 M	0.609 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0271 M	<0.015 M	<0.3 #	0.168 M	0.89 M	1.16 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	<0.36 #	0.129 M	0.712 M	0.706 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.46 #	0.029 M	0.149 M	0.197 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	<0.48 #	0.115 M	0.628 M	0.82 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.374	<0.118	27.7	2.87	20.4	20.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J3	3C-J3-V	4C-K2	4C-K2		
			Depth (m)	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018		
			SDG Ref	181020-29	181020-29	181020-29	181020-29		
			Lab Sample No.(s)	18569484	18569492	18569431	18569435		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.5	94.9	83.9	85.6		
Acenaphthene-d10 % recovery**	%	TM218		97.2	95.1	88.7	89.9		
Phenanthrene-d10 % recovery**	%	TM218		96.8	94.7	90.7	89.5		
Chrysene-d12 % recovery**	%	TM218		94.8	92.2	83.9	82.9		
Perylene-d12 % recovery**	%	TM218		86.9	90.1	70.7	83.6		
Naphthalene	<0.009 mg/kg	TM218		1.03 M	<0.009 M	0.378 M	0.0957 M		
Acenaphthylene	<0.012 mg/kg	TM218		0.279 M	<0.012 M	0.114 M	0.0392 M		
Acenaphthene	<0.008 mg/kg	TM218		0.0735 M	<0.008 M	0.0213 M	0.00876 M		
Fluorene	<0.01 mg/kg	TM218		0.315 M	<0.01 M	0.0461 M	0.02 M		
Phenanthrene	<0.015 mg/kg	TM218		2.59 M	0.0572 M	0.491 M	0.206 M		
Anthracene	<0.016 mg/kg	TM218		0.564 M	<0.016 M	0.123 M	0.0539 M		
Fluoranthene	<0.017 mg/kg	TM218		3.35 M	0.0702 M	0.883 M	0.423 M		
Pyrene	<0.015 mg/kg	TM218		2.51 M	0.0543 M	0.74 M	0.336 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		1.39 M	0.033 M	0.52 M	0.203 M		
Chrysene	<0.01 mg/kg	TM218		1.5 M	0.0375 M	0.635 M	0.194 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.83 M	0.0449 M	0.863 M	0.218 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.651 M	<0.014 M	0.289 M	0.107 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.15 M	0.0298 M	0.458 M	0.193 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.695 M	<0.018 M	0.404 M	0.158 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.144 M	<0.023 M	0.0798 M	0.0311 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.766 M	<0.024 M	0.434 M	0.193 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		18.8	0.327	6.48	2.48		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B5	3C-B5	3C-B5-V	3C-C5	3C-C5	3C-D5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569608	18569616	18569620	18569592	18569601	18569571
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		73	71 &	103	57 &	90.4	83
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 & #	<0.2 M	<0.2 & #	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.75	1.66	<0.1	2.83	2.82	1.07
Aliphatics >C16-C21	<0.1 mg/kg	TM173		8.01	12.3	<0.1	11.7	12.1	7
Aliphatics >C21-C35	<0.1 mg/kg	TM173		44.1	82.4	<0.1	53.1	87.3	24.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		18.2	31.3	<0.1	11.8	35.4	10.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		72.1	128	<0.1	79.5	137	43.3
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02 &	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		13.2	2.54	<0.1	3.92	1.73	2.64
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		307	22.7	<0.1	37.4	14.2	30.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		634	133	6.66	111	106	122
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		175	47.7	0.702	26.5	44.6	43.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		53	15.9	<0.1	7.91	17.4	14.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		1130	206	7.37	179	167	200
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1200	333	7.37	259	305	243

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-D5	3C-D5-V	3C-E5	3C-E5	3C-E5	4C-E2
			Depth (m)	1.60 - 1.60	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569579	18569583	18569551	18569555	18569560	18569439
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97	141 &	101	104	95	75 &
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 #	<0.2 & #	<0.2 M	<0.2 M	<0.2 M	<0.2 & M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02 &
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.0224 &	<0.02	<0.02	<0.02	<0.02 &
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.0251 &	<0.02	<0.02	<0.02	<0.02 &
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02 &
Aliphatics >C12-C16	<0.1 mg/kg	TM173		16.7	<0.1	<0.1	<0.1	<0.1	2.01
Aliphatics >C16-C21	<0.1 mg/kg	TM173		19.3	<0.1	1.35	<0.1	<0.1	11.3
Aliphatics >C21-C35	<0.1 mg/kg	TM173		86.5	<0.1	16.5	<0.1	2.42	98
Aliphatics >C35-C44	<0.1 mg/kg	TM173		180	<0.1	8.17	<0.1	<0.1	49.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		303	<0.1	26	<0.1	2.42	161
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02 &
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02 &
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02 &
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02 &
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		5.31	<0.1	<0.1	<0.1	<0.1	1.62
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		21	<0.1	1.33	1.75	<0.1	8.37
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		131	3.72	29.3	12.5	1.44	64.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		219	4.04	19	6.23	<0.1	38.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		109	1.92	7.78	2.67	<0.1	15.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		376	7.76	49.6	20.5	1.44	113
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		679	7.76	75.6	20.5	3.86	274

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-E2	4C-E5	4C-E5	4C-E6	4C-E6	4C-E7
			Depth (m)	0.70 - 0.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569443	18569632	18569636	18569575	18569624	18569400
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		100	73 &	92.2	106	112	109
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 #	<0.2 & M	<0.2 M	<0.2 M	<0.2 #	<0.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	3.12	1.77	0.308	2.09
Aliphatics >C16-C21	<0.1 mg/kg	TM173		2.03	8.31	13.6	12.2	4.24	5.48
Aliphatics >C21-C35	<0.1 mg/kg	TM173		9.43	78.7	75.4	54.5	23.6	20.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		0.812	25.1	22.5	22.3	10	5.63
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		12.3	112	115	90.7	38.2	33.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02 &	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	2	1.1	1.32	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		4.51	11.7	5.39	12.1	0.248	2.05
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		43.6	71.4	41	50.1	0.371	15.2
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		13.2	41.9	23.8	25.3	0.242	3.42
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		4.56	16	9.43	10.2	0.111	0.909
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		61.3	127	71.3	88.8	0.86	20.7
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		73.6	239	186	180	39.1	54.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-E7	4C-E7	3C-E5-V	4C-E5-V	4C-E6-V	3C-F5
			Depth (m)	1.00 - 1.00	1.40 - 1.40	3.40 - 3.40	2.00 - 2.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569462	18569525	18569566	18569646	18569628	18569533
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		91 &	107	125 &	90 &	94 &	91.3
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 & #	<0.2 M	<0.2 & M	<0.2 & M	<0.2 & M	<0.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.982	2.47	<0.1	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		4.31	6.53	<0.1	<0.1	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		27.9	48.3	<0.1	<0.1	1.84	30.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		9.4	17.9	<0.1	<0.1	3.21	17.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		42.6	75.2	<0.1	<0.1	5.05	48.6
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02 &	<0.02 &	<0.02 &	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	0.762	<0.1	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	3.1	<0.1	<0.1	<0.1	2.78
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		4.51	21	1.68	2.55	1.2	47
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		0.614	11.2	<0.1	0.426	0.676	47.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	4.12	<0.1	<0.1	<0.1	21.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		5.13	36.1	1.68	2.97	1.87	97.7
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		47.7	111	1.68	2.97	6.92	146

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-F5	3C-F5	3C-F5-V	3C-G4	3C-G4	3C-G4
			Depth (m)	1.00 - 1.00	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569538	18569542	18569547	18569504	18569512	18569520
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		94	73	120	123	17 &	87.3
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 #	<0.2 M	<0.2 M	<0.2 M	0.506 & #	<0.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0451 &	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.157 &	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0748 &	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0693 &	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.15	4.79	<0.1	<0.1	12.3	6.19
Aliphatics >C16-C21	<0.1 mg/kg	TM173		10.1	13.2	<0.1	<0.1	23.4	13.7
Aliphatics >C21-C35	<0.1 mg/kg	TM173		50.7	57.2	<0.1	2.53	61	106
Aliphatics >C35-C44	<0.1 mg/kg	TM173		11.7	14.2	<0.1	0.646	11.2	56.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		77.6	89.4	<0.1	3.17	108	182
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0209 &	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0418 &	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0506 &	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0462 &	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.84	5.53	<0.1	<0.1	9.52	5.2
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		33	74.4	<0.1	<0.1	25.2	24.8
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		148	167	3.28	3.7	66.7	107
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		53.6	56.2	<0.1	<0.1	16.5	58.4
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		20.1	20.7	<0.1	2.5	4.58	21.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		237	303	3.28	3.7	118	195
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		315	393	3.28	6.87	226	377

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5	3C-G5	3C-G5	4C-G8	4C-G8	3C-G4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	3.10 - 3.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569447	18569451	18569455	18569415	18569420	18569529
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		20.1 &	50.4	54 &	96	89 &	106
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.315 & #	0.123 #	0.342 & #	<0.2 M	<0.2 & M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0203 &	<0.01	0.0366 &	<0.02	<0.02 &	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0857 &	0.0337	0.071 &	<0.02	<0.02 &	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0568 &	0.021	0.0548 &	<0.02	<0.02 &	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0482 &	0.0168	0.0688 &	<0.02	<0.02 &	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.54	12.2	5.54	4.48	3.53	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		10.4	53	22.6	23.7	22.6	0.767
Aliphatics >C21-C35	<0.1 mg/kg	TM173		55.3	82.3	108	175	182	9.78
Aliphatics >C35-C44	<0.1 mg/kg	TM173		4.12	16.8	46.1	42.5	55.3	4.57
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		76.3	164	182	245	264	15.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 &	<0.01	<0.02 &	<0.02	<0.02 &	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.0257 &	0.0126	0.0215 &	<0.02	<0.02 &	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0375 &	0.0147	0.0366 &	<0.02	<0.02 &	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0321 &	0.0116	0.0462 &	<0.02	<0.02 &	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		6.51	11.7	6.5	3.03	2.22	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		20.3	73.3	31.6	15	11.4	1.6
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		48.1	157	112	92.9	110	9.84
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		12.8	37.3	52.4	53.7	87	5.11
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		4.38	11.2	19.4	22.7	37.8	2.03
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		87.8	279	202	165	211	16.6
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		164	444	385	410	474	31.7

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5-V	4C-G8-V	3C-I3	3C-I3	3C-J3	3C-J3
			Depth (m)	3.00 - 3.00	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569469	18569427	18569496	18569500	18569476	18569480
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		103	116	70 &	92.3	44.9 &	70.7
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	2.98 & #	<0.2 M	<0.2 & #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02 &	<0.02	<0.02 &	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	0.0662 &	<0.02	<0.02 &	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	0.403 &	<0.02	<0.02 &	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	1.33 &	<0.02	<0.02 &	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	58.4	0.999	6.41	9.48
Aliphatics >C16-C21	<0.1 mg/kg	TM173		0.254	<0.1	23	7.6	11.1	33.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		9.83	<0.1	297	54.7	37.7	168
Aliphatics >C35-C44	<0.1 mg/kg	TM173		10.1	<0.1	261	13.7	4.93	81.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		20.2	<0.1	639	77	60.2	293
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02 &	<0.02	<0.02 &	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02 &	<0.02	<0.02 &	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	0.268 &	<0.02	<0.02 &	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	0.888 &	<0.02	<0.02 &	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.36	<0.1	21.2	0.765	9.8	6.32
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1.55	<0.1	41.3	4.78	26.9	32.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		24.5	3.41	737	30	70.6	236
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		17.2	0.963	559	18.1	18.8	144
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.65	<0.1	250	7.92	8.9	61.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		43.6	4.37	1360	53.6	126	419
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		63.8	4.37	2000	131	186	711

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J3	3C-J3-V	4C-K2	4C-K2		
			Depth (m)	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018		
			SDG Ref	181020-29	181020-29	181020-29	181020-29		
			Lab Sample No.(s)	18569484	18569492	18569431	18569435		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		73 &	77	88	107		
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 & M	<0.2 M	<0.2 M	<0.2 M		
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.43	<0.1	1.29	<0.1		
Aliphatics >C16-C21	<0.1 mg/kg	TM173		17	<0.1	11.3	1.65		
Aliphatics >C21-C35	<0.1 mg/kg	TM173		107	3.04	105	37.1		
Aliphatics >C35-C44	<0.1 mg/kg	TM173		46.5	<0.1	30.3	10.1		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		173	3.04	148	48.9		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 &	<0.02	<0.02	<0.02		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.71	<0.1	<0.1	0.444		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		20.7	<0.1	1.82	2.35		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		116	1.6	22.3	20.4		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		66.5	<0.1	3.1	12.5		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		27.3	3	<0.1	7.68		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		207	1.6	27.2	35.7		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		380	4.64	175	84.5		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B5	3C-B5	3C-B5-V	3C-C5	3C-C5	3C-D5
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	0.80 - 0.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569608	18569616	18569620	18569592	18569601	18569571
			AGS Reference						
Dibromofluoromethane**	%	TM116		103	106	107	93	109	103
Toluene-d8**	%	TM116		96.2	94.4	99.8	91.8	95.9	96.2
4-Bromofluorobenzene**	%	TM116		85.1	84.9	92.7	75.9	91.6	82.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 #	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 #	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 #	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.214 M	0.151 & #	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-D5	3C-D5-V	3C-E5	3C-E5	3C-E5	4C-E2
			Depth (m)	1.60 - 1.60	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569579	18569583	18569551	18569555	18569560	18569439
			AGS Reference						
Dibromofluoromethane**	%	TM116		125	113	105	99.2	107	105 &
Toluene-d8**	%	TM116		93.8	99.8	99.1	97.2	99.6	97.5 &
4-Bromofluorobenzene**	%	TM116		79.6	99.8	90	92.9	94.3	81.9 &
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.01 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 & M
Benzene	<0.009 mg/kg	TM116		<0.009 #	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 & M
Toluene	<0.007 mg/kg	TM116		<0.007 #	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 & M
Ethylbenzene	<0.004 mg/kg	TM116		<0.004 #	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 & M
p/m-Xylene	<0.01 mg/kg	TM116		<0.01 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 & #
o-Xylene	<0.01 mg/kg	TM116		<0.01 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 & M
Naphthalene	<0.013 mg/kg	TM116		<0.013 #	<0.13 M	<0.13 M	<0.13 & M	<0.13 M	<0.13 & M
Sum of BTEX	<0.04 mg/kg	TM116		<0.04	<0.4	<0.4	<0.4	<0.4	<0.4 &

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-E2	4C-E5	4C-E5	4C-E6	4C-E6	4C-E7
			Depth (m)	0.70 - 0.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569443	18569632	18569636	18569575	18569624	18569400
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	110 &	109	108	113	110
Toluene-d8**	%	TM116		98.7	97.9 &	98.7	97.4	98.8	99.7
4-Bromofluorobenzene**	%	TM116		95.7	84.1 &	97.2	93.6	99.8	99
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 #	<0.1 & M	<0.1 M	<0.1 M	<0.1 #	<0.1 #
Benzene	<0.009 mg/kg	TM116		<0.09 #	<0.09 & M	<0.09 M	<0.09 M	<0.09 #	<0.09 #
Toluene	<0.007 mg/kg	TM116		<0.07 #	<0.07 & M	<0.07 M	<0.07 M	<0.07 #	<0.07 #
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 #	<0.04 & M	<0.04 M	<0.04 M	<0.04 #	<0.04 #
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 & #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 & M	<0.1 M	<0.1 M	<0.1 #	<0.1 #
Naphthalene	<0.013 mg/kg	TM116		<0.13 & #	<0.13 & M	<0.13 M	<0.13 M	<0.13 #	<0.13 #
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4 &	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4C-E7	4C-E7	3C-E5-V	4C-E5-V	4C-E6-V	3C-F5
			Depth (m)	1.00 - 1.00	1.40 - 1.40	3.40 - 3.40	2.00 - 2.00	2.00 - 2.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569462	18569525	18569566	18569646	18569628	18569533
			AGS Reference						
Dibromofluoromethane**	%	TM116		110 &	111	111 &	175 &	129 &	113
Toluene-d8**	%	TM116		98.9 &	99	100 &	100 &	100 &	96.5
4-Bromofluorobenzene**	%	TM116		87.9 &	95.4	90.5 &	101 &	90.9 &	91.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 & #	<0.1 M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 #
Benzene	<0.009 mg/kg	TM116		<0.09 & #	<0.09 M	<0.09 & M	<0.09 & M	<0.09 & M	<0.09 #
Toluene	<0.007 mg/kg	TM116		<0.07 & #	<0.07 M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 #
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 & #	<0.04 M	<0.04 & M	<0.04 & M	<0.04 & M	<0.04 #
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 & #	<0.1 #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 & #	<0.1 M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 #
Naphthalene	<0.013 mg/kg	TM116		<0.13 & #	<0.13 M	<0.13 & M	<0.13 & M	<0.13 & M	<0.13 #
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 &	<0.4	<0.4 &	<0.4 &	<0.4 &	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-F5	3C-F5	3C-F5-V	3C-G4	3C-G4	3C-G4
			Depth (m)	1.00 - 1.00	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569538	18569542	18569547	18569504	18569512	18569520
			AGS Reference						
Dibromofluoromethane**	%	TM116		104	85.7	113	112	107 &	95.8
Toluene-d8**	%	TM116		98	95.1	99.2	100	101 &	97.2
4-Bromofluorobenzene**	%	TM116		96.2	87.4	98.7	99.3	101 &	93.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 #	<0.1 M	<0.1 M	<0.1 M	<2 & M	<0.1 #
Benzene	<0.009 mg/kg	TM116		<0.09 #	<0.09 M	<0.09 M	<0.09 M	<1.8 & M	<0.09 #
Toluene	<0.007 mg/kg	TM116		<0.07 #	<0.07 M	<0.07 M	<0.07 M	<1.4 & M	<0.07 #
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 #	<0.04 M	<0.04 M	<0.04 M	<0.8 & M	<0.04 #
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<2 & #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 M	<0.1 M	<0.1 M	<2 & M	<0.1 #
Naphthalene	<0.013 mg/kg	TM116		<0.13 #	<0.13 M	<0.13 M	<0.13 M	<2.6 & M	<0.13 #
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<8 &	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5	3C-G5	3C-G5	4C-G8	4C-G8	3C-G4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	3.10 - 3.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569447	18569451	18569455	18569415	18569420	18569529
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.8 &	99.6	99.4 &	109	112 &	112
Toluene-d8**	%	TM116		95.6 &	96.5	95.7 &	95.5	98.7 &	99.1
4-Bromofluorobenzene**	%	TM116		109 &	69.5	79.6 &	93.4	89.6 &	94.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<2 & M	<0.1 M	<0.1 & M	<0.1 M	<0.1 & M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<1.8 & M	<0.09 M	<0.09 & M	<0.09 M	<0.09 & M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<1.4 & M	0.11 M	<0.07 & M	<0.07 M	<0.07 & M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.8 & M	<0.04 M	<0.04 & M	<0.04 M	<0.04 & M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<2 & #	<0.1 #	<0.1 & #	<0.1 #	<0.1 & #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<2 & M	<0.1 M	<0.1 & M	<0.1 M	<0.1 & M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<2.6 & M	0.279 M	0.288 & M	<0.13 & M	<0.13 & M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<8 &	<0.4	<0.4 &	<0.4	<0.4 &	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-G5-V	4C-G8-V	3C-I3	3C-I3	3C-J3	3C-J3
			Depth (m)	3.00 - 3.00	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018	18/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018	20/10/2018
			SDG Ref	181020-29	181020-29	181020-29	181020-29	181020-29	181020-29
			Lab Sample No.(s)	18569469	18569427	18569496	18569500	18569476	18569480
			AGS Reference						
Dibromofluoromethane**	%	TM116		110	109	107 &	101	99.4 &	105
Toluene-d8**	%	TM116		99.5	100	98.2 &	96.1	96.5 &	98.1
4-Bromofluorobenzene**	%	TM116		95.7	93.1	84 &	91.6	111 &	70
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 & #	<0.1 M	<2 & M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 & #	<0.09 M	<1.8 & M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 & #	<0.07 M	<1.4 & M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 & #	<0.04 M	<0.8 & M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 & #	<0.1 #	<2 & #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 & #	<0.1 M	<2 & M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	2.25 & #	<0.13 M	<2.6 & M	0.506 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4 &	<0.4	<8 &	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J3	3C-J3-V	4C-K2	4C-K2		
			Depth (m)	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	18/10/2018	18/10/2018	18/10/2018	18/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	20/10/2018	20/10/2018	20/10/2018	20/10/2018		
			SDG Ref	181020-29	181020-29	181020-29	181020-29		
			Lab Sample No.(s)	18569484	18569492	18569431	18569435		
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	104	110	110		
Toluene-d8**	%	TM116		92	98	92	98.5		
4-Bromofluorobenzene**	%	TM116		90.2	87.8	84.5	96.7		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M		
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M		
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M		
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #		
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Naphthalene	<0.013 mg/kg	TM116		0.265 & M	<0.13 M	<0.13 & M	<0.13 M		
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4		

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-B5 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 11:43:30 181020-29 18569616 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-C5 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 09:05:55 181020-29 18569601 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-D5 0.80 - 0.80 SOLID 18/10/2018 00:00:00 23/10/2018 20:28:20 181020-29 18569571 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-E5 1.50 - 1.50 SOLID 18/10/2018 00:00:00 23/10/2018 10:53:48 181020-29 18569555 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-E5 2.00 - 2.00 SOLID 18/10/2018 00:00:00 23/10/2018 08:51:49 181020-29 18569560 TM048	05/11/2018	Marcin Magdziarek	Soil containing ACM debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-E2 0.70 - 0.70 SOLID 18/10/2018 00:00:00 23/10/2018 10:39:14 181020-29 18569443 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181020-29 **Client Reference:** **Report Number:** 480661
Location: Llanwern **Order Number:** LLA492 **Superseded Report:** 479955

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-E5 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 11:11:27 181020-29 18569636 TM048	05/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-E6 0.50 - 0.50 SOLID 18/10/2018 00:00:00 23/10/2018 11:20:40 181020-29 18569575 TM048	05/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-E6 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 10:49:19 181020-29 18569624 TM048	05/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-E7 0.50 - 0.50 SOLID 18/10/2018 00:00:00 23/10/2018 11:18:55 181020-29 18569400 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-E7 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 11:22:03 181020-29 18569462 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-F5 0.50 - 0.50 SOLID 18/10/2018 00:00:00 23/10/2018 10:36:41 181020-29 18569533 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181020-29 **Client Reference:** **Report Number:** 480661
Location: Llanwern **Order Number:** LLA492 **Superseded Report:** 479955

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-F5 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 08:58:47 181020-29 18569538 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-G4 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 11:46:30 181020-29 18569512 TM048	05/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-G4 2.00 - 2.00 SOLID 18/10/2018 00:00:00 23/10/2018 11:40:31 181020-29 18569520 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-G5 0.50 - 0.50 SOLID 18/10/2018 00:00:00 23/10/2018 09:41:25 181020-29 18569447 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-G5 1.50 - 1.50 SOLID 18/10/2018 00:00:00 23/10/2018 09:24:23 181020-29 18569455 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-G8 0.50 - 0.50 SOLID 18/10/2018 00:00:00 24/10/2018 07:27:52 181020-29 18569415 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181020-29 **Client Reference:** **Report Number:** 480661
Location: Llanwern **Order Number:** LLA492 **Superseded Report:** 479955

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-G8 1.00 - 1.00 SOLID 18/10/2018 00:00:00 23/10/2018 09:38:42 181020-29 18569420 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I3 0.50 - 0.50 SOLID 18/10/2018 00:00:00 23/10/2018 08:54:12 181020-29 18569496 TM048	05/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I3 1.50 - 1.50 SOLID 18/10/2018 00:00:00 24/10/2018 07:20:44 181020-29 18569500 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-J3 1.50 - 1.50 SOLID 18/10/2018 00:00:00 23/10/2018 09:44:55 181020-29 18569480 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-J3 2.00 - 2.00 SOLID 18/10/2018 00:00:00 24/10/2018 07:25:05 181020-29 18569484 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-K2 0.50 - 0.50 SOLID 18/10/2018 00:00:00 23/10/2018 11:37:42 181020-29 18569431 TM048	05/11/2018	Marcin Magdziarek	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-E5 2.00 - 2.00 SOLID 18/10/2018 00:00:00 23/10/2018 08:52:31 181020-29 18569560 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4C-K2 0.50 - 0.50 SOLID 18/10/2018 00:00:00 23/10/2018 11:38:42 181020-29 18569431 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569400
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.867	<0.2	8.67	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000487	<0.00001	0.000487	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Arsenic	0.00756	<0.0005	0.0756	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000817	<0.000005	0.000817	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000123	<0.000005	0.00123	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000259	<0.000005	0.000259	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000612	<0.000005	0.000612	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0083	<0.0003	0.083	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.70
Conductivity (µS/cm)	275.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

12/11/2018 13:12:07

13:11:31 12/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569400
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000464	<0.000082	0.00464	<0.00082	-	-	-
Nickel	0.0016	<0.0004	0.016	<0.004	-	-	-
Selenium	0.00692	<0.001	0.0692	<0.01	-	-	-
Vanadium	0.0689	<0.001	0.689	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.70
Conductivity (µS/cm)	275.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569415
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-G8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000673	<0.00001	0.000673	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000314	<0.000005	0.000314	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000335	<0.000005	0.000335	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000241	<0.000005	0.00241	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000438	<0.000005	0.000438	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000193	<0.000005	0.00193	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000403	<0.000005	0.000403	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Pyrene (diss.filt)	0.000219	<0.000005	0.00219	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.0117	<0.001	0.117	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0041	<0.0003	0.041	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.44
Conductivity (µS/cm)	932.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569415
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-G8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000885	<0.000082	0.00885	<0.00082	-	-	-
Nickel	0.000616	<0.0004	0.00616	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0108	<0.001	0.108	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.44
Conductivity (µS/cm)	932.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569420
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-G8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000377	<0.00001	0.000377	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000783	<0.000005	0.0000783	<0.00005	-	-	-
Arsenic	0.00124	<0.0005	0.0124	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000392	<0.000005	0.000392	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000763	<0.000005	0.000763	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00289	<0.001	0.0289	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00154	<0.0003	0.0154	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.27
Conductivity (µS/cm)	427.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569420
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-G8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00018	<0.000082	0.0018	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00203	<0.001	0.0203	<0.01	-	-	-
Vanadium	0.048	<0.001	0.48	<0.01	-	-	-
Zinc	0.0179	<0.001	0.179	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.27
Conductivity (µS/cm)	427.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569431
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-K2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000214	<0.00001	0.000214	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00101	<0.0005	0.0101	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000368	<0.000005	0.000368	<0.00005	-	-	-
Anthracene (diss.filt)	0.00000779	<0.000005	0.0000779	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000222	<0.000005	0.000222	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000315	<0.000005	0.000315	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00379	<0.001	0.0379	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000103	<0.000002	0.000103	<0.00002	-	-	-
Copper	0.00404	<0.0003	0.0404	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.07
Conductivity (µS/cm)	296.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569431
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-K2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000146	<0.000082	0.00146	<0.00082	-	-	-
Nickel	0.000545	<0.0004	0.00545	<0.004	-	-	-
Selenium	0.00174	<0.001	0.0174	<0.01	-	-	-
Vanadium	0.0612	<0.001	0.612	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.07
Conductivity (µS/cm)	296.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569435
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-K2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00111	<0.0003	0.0111	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.49
Conductivity (µS/cm)	56.80
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569435
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-K2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00874	<0.001	0.0874	<0.01	-	-	-
Zinc	0.00185	<0.001	0.0185	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.49
Conductivity (µS/cm)	56.80
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569439
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.201	<0.2	2.01	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00217	<0.0005	0.0217	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000289	<0.000005	0.000289	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000203	<0.000005	0.000203	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00203	<0.001	0.0203	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0029	<0.0003	0.029	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.17
Conductivity (µS/cm)	320.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569439
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	0.000653	<0.0004	0.00653	<0.004	-	-	-
Selenium	0.00197	<0.001	0.0197	<0.01	-	-	-
Vanadium	0.111	<0.001	1.11	<0.01	-	-	-
Zinc	0.00104	<0.001	0.0104	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.17
Conductivity (µS/cm)	320.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.37
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.9
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569443
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E2
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000428	<0.00001	0.000428	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000417	<0.000005	0.000417	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000715	<0.000005	0.00715	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000385	<0.000005	0.000385	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0004	<0.000005	0.004	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000186	<0.000005	0.000186	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000691	<0.000005	0.000691	<0.00005	-	-	-
Pyrene (diss.filt)	0.000612	<0.000005	0.00612	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000464	<0.000005	0.000464	<0.00005	-	-	-
Chromium	0.00128	<0.001	0.0128	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000209	<0.000005	0.000209	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000864	<0.000002	0.0000864	<0.00002	-	-	-
Copper	0.00125	<0.0003	0.0125	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000227	<0.0002	0.00227	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.77
Conductivity (µS/cm)	1,780.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.37
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.9
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569443
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E2
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00203	<0.000082	0.0203	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00104	<0.001	0.0104	<0.01	-	-	-
Vanadium	0.00527	<0.001	0.0527	<0.01	-	-	-
Zinc	0.00359	<0.001	0.0359	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.484	<0.019	4.84	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.77
Conductivity (µS/cm)	1,780.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569447
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.0046	<0.001	0.046	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0212	<0.0003	0.212	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.00199	<0.0002	0.0199	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.76
Conductivity (µS/cm)	1,890.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569447
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	0.00277	<0.0004	0.0277	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00384	<0.001	0.0384	<0.01	-	-	-
Zinc	0.00503	<0.001	0.0503	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.76
Conductivity (µS/cm)	1,890.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	5.26
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569451
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.25	<0.2	2.5	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000823	<0.00001	0.000823	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000744	<0.000005	0.000744	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000179	<0.000005	0.000179	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000374	<0.000005	0.000374	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000663	<0.000005	0.000663	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00101	<0.001	0.0101	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00438	<0.0003	0.0438	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.0101	<0.0002	0.101	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	0.00356	<0.003	0.0356	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.48
Conductivity (µS/cm)	4.86
Temperature (°C)	18.50
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	5.26
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569451
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000514	<0.000082	0.00514	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0174	<0.001	0.174	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.48
Conductivity (µS/cm)	4.86
Temperature (°C)	18.50
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569455
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.478	<0.2	4.78	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000767	<0.00001	0.000767	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000393	<0.000005	0.000393	<0.00005	-	-	-
Arsenic	0.00166	<0.0005	0.0166	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000139	<0.000005	0.00139	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000291	<0.000005	0.000291	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000169	<0.000005	0.00169	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000547	<0.000005	0.000547	<0.00005	-	-	-
Chrysene (diss.filt)	0.00000824	<0.000005	0.0000824	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000899	<0.000005	0.000899	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000086	<0.000005	0.000086	<0.00005	-	-	-
Chromium	0.00213	<0.001	0.0213	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0248	<0.0003	0.248	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.23
Conductivity (µS/cm)	621.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.1
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569455
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000735	<0.000082	0.00735	<0.00082	-	-	-
Nickel	0.00559	<0.0004	0.0559	<0.004	-	-	-
Selenium	0.00123	<0.001	0.0123	<0.01	-	-	-
Vanadium	0.0285	<0.001	0.285	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.23
Conductivity (µS/cm)	621.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569462
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.477	<0.2	4.77	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000597	<0.00001	0.000597	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000217	<0.000005	0.00217	<0.00005	-	-	-
Arsenic	0.00495	<0.0005	0.0495	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000257	<0.000005	0.00257	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000571	<0.000005	0.000571	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000252	<0.000005	0.00252	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000343	<0.000005	0.000343	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Pyrene (diss.filt)	0.000175	<0.000005	0.00175	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.00000723	<0.000005	0.0000723	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000929	<0.000005	0.0000929	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000898	<0.000002	0.0000898	<0.00002	-	-	-
Copper	0.00565	<0.0003	0.0565	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.86
Conductivity (µS/cm)	285.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569462
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00112	<0.000082	0.0112	<0.00082	-	-	-
Nickel	0.000907	<0.0004	0.00907	<0.004	-	-	-
Selenium	0.00364	<0.001	0.0364	<0.01	-	-	-
Vanadium	0.0476	<0.001	0.476	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.86
Conductivity (µS/cm)	285.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569476
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-J3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000195	<0.00001	0.000195	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00148	<0.0005	0.0148	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000134	<0.000005	0.00134	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000148	<0.000005	0.00148	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000411	<0.000005	0.000411	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000917	<0.000005	0.000917	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000414	<0.000005	0.000414	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000522	<0.000005	0.000522	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000233	<0.000005	0.000233	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000273	<0.000002	0.000273	<0.00002	-	-	-
Copper	0.00209	<0.0003	0.0209	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000191	<0.000005	0.000191	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.67
Conductivity (µS/cm)	151.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569476
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-J3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00065	<0.000082	0.0065	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00113	<0.001	0.0113	<0.01	-	-	-
Vanadium	0.00698	<0.001	0.0698	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.67
Conductivity (µS/cm)	151.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569480
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-J3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000241	<0.00001	0.000241	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000429	<0.00001	0.00429	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000236	<0.000005	0.000236	<0.00005	-	-	-
Arsenic	0.000631	<0.0005	0.00631	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000991	<0.000005	0.000991	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000895	<0.000005	0.000895	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000349	<0.000005	0.000349	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000178	<0.000005	0.00178	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000581	<0.000005	0.000581	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000744	<0.000005	0.000744	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00484	<0.001	0.0484	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0184	<0.0003	0.184	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000206	<0.0002	0.00206	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,310.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569480
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-J3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000987	<0.000082	0.00987	<0.00082	-	-	-
Nickel	0.00159	<0.0004	0.0159	<0.004	-	-	-
Selenium	0.00115	<0.001	0.0115	<0.01	-	-	-
Vanadium	0.00775	<0.001	0.0775	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,310.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569484
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-J3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000526	<0.00001	0.00526	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000772	<0.000005	0.000772	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000726	<0.000005	0.000726	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000153	<0.000005	0.00153	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000236	<0.000005	0.000236	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.00029	<0.000005	0.0029	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000551	<0.000005	0.000551	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00212	<0.001	0.0212	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00616	<0.0003	0.0616	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.67
Conductivity (µS/cm)	1,170.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569484
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-J3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00132	<0.000082	0.0132	<0.00082	-	-	-
Nickel	0.000523	<0.0004	0.00523	<0.004	-	-	-
Selenium	0.00112	<0.001	0.0112	<0.01	-	-	-
Vanadium	0.00838	<0.001	0.0838	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.67
Conductivity (µS/cm)	1,170.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case				
SDG	181020-29			
Lab Sample Number(s)	18569496			
Sampled Date	18-Oct-2018			
Customer Sample Ref.	3C-I3			
Depth (m)	0.50 - 0.50			

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.021	<0.01	0.21	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.021	<0.01	0.21	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.042	<0.01	0.42	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.707	<0.00001	7.07	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0791	<0.000005	0.791	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.033	<0.000005	0.33	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0209	<0.000005	0.209	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00385	<0.001	0.0385	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00828	<0.0003	0.0828	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.00106	<0.0002	0.0106	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.41
Conductivity (µS/cm)	3.60
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569496
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-I3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.84	<0.000082	8.4	<0.00082	-	-	-
Nickel	0.00113	<0.0004	0.0113	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00447	<0.001	0.0447	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.41
Conductivity (µS/cm)	3.60
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569500
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-I3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000603	<0.00001	0.000603	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.000586	<0.0005	0.00586	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000386	<0.000005	0.000386	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000054	<0.000005	0.00054	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000323	<0.000005	0.000323	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00746	<0.001	0.0746	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00765	<0.0003	0.0765	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.98
Conductivity (µS/cm)	1,350.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569500
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-I3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000185	<0.000082	0.00185	<0.00082	-	-	-
Nickel	0.000866	<0.0004	0.00866	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00464	<0.001	0.0464	<0.01	-	-	-
Zinc	0.00148	<0.001	0.0148	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.98
Conductivity (µS/cm)	1,350.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569504
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.000722	<0.0005	0.00722	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00581	<0.0003	0.0581	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.49
Conductivity (µS/cm)	131.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569504
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	0.000893	<0.0004	0.00893	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.352	<0.019	3.52	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.49
Conductivity (µS/cm)	131.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569512
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00228	<0.0005	0.0228	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00725	<0.0003	0.0725	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.88
Conductivity (µS/cm)	281.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569512
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	0.000698	<0.0004	0.00698	<0.004	-	-	-
Selenium	0.00346	<0.001	0.0346	<0.01	-	-	-
Vanadium	0.0561	<0.001	0.561	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.595	<0.019	5.95	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.88
Conductivity (µS/cm)	281.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569520
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G4
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000165	<0.00001	0.00165	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000248	<0.000005	0.000248	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00101	<0.000005	0.0101	<0.00005	-	-	-
Anthracene (diss.filt)	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.00292	<0.000005	0.0292	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000198	<0.000005	0.000198	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000384	<0.000005	0.000384	<0.00005	-	-	-
Pyrene (diss.filt)	0.000722	<0.000005	0.00722	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000202	<0.000005	0.000202	<0.00005	-	-	-
Chromium	0.00159	<0.001	0.0159	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000136	<0.000005	0.000136	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.00000672	<0.000005	0.0000672	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000453	<0.000002	0.0000453	<0.00002	-	-	-
Copper	0.00978	<0.0003	0.0978	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.00269	<0.0002	0.0269	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	12.36
Conductivity (µS/cm)	7.16
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569520
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-G4
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00518	<0.000082	0.0518	<0.00082	-	-	-
Nickel	0.000882	<0.0004	0.00882	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0114	<0.001	0.114	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	12.36
Conductivity (µS/cm)	7.16
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569525
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E7
Depth (m)	1.40 - 1.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.337	<0.2	3.37	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000109	<0.00001	0.000109	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000361	<0.000005	0.00361	<0.00005	-	-	-
Arsenic	0.00369	<0.0005	0.0369	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000412	<0.000005	0.00412	<0.00005	-	-	-
Anthracene (diss.filt)	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000816	<0.000005	0.00816	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000942	<0.000005	0.000942	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000136	<0.000005	0.000136	<0.00005	-	-	-
Pyrene (diss.filt)	0.00028	<0.000005	0.0028	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.00000544	<0.000005	0.0000544	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0102	<0.0003	0.102	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	369.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569525
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E7
Depth (m)	1.40 - 1.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00208	<0.000082	0.0208	<0.00082	-	-	-
Nickel	0.000962	<0.0004	0.00962	<0.004	-	-	-
Selenium	0.00303	<0.001	0.0303	<0.01	-	-	-
Vanadium	0.0412	<0.001	0.412	<0.01	-	-	-
Zinc	0.00255	<0.001	0.0255	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	369.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569533
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-F5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00356	<0.0005	0.0356	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00582	<0.0003	0.0582	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.56
Conductivity (µS/cm)	112.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569533
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-F5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00822	<0.001	0.0822	<0.01	-	-	-
Zinc	0.00274	<0.001	0.0274	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.56
Conductivity (µS/cm)	112.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569538
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-F5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	1.82	<0.5	18.2	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	1.82	<0.5	18.2	<5	-	-	-
Total Aromatics >EC12-EC35	1.82	<0.5	18.2	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	1.82	<0.01	18.2	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.62	<0.2	6.2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000216	<0.00001	0.000216	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000229	<0.00001	0.000229	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Arsenic	0.000804	<0.0005	0.00804	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00486	<0.000005	0.0486	<0.00005	-	-	-
Anthracene (diss.filt)	0.0191	<0.000005	0.191	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0186	<0.000005	0.186	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000164	<0.000005	0.000164	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.00296	<0.000005	0.0296	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000158	<0.000005	0.00158	<0.00005	-	-	-
Chromium	0.00503	<0.001	0.0503	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000125	<0.000002	0.000125	<0.00002	-	-	-
Copper	0.0254	<0.0003	0.254	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Lead	0.00302	<0.0002	0.0302	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000217	<0.000005	0.000217	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.16
Conductivity (µS/cm)	6,180.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569538
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-F5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.0459	<0.000082	0.459	<0.00082	-	-	-
Nickel	0.00377	<0.0004	0.0377	<0.004	-	-	-
Selenium	0.00102	<0.001	0.0102	<0.01	-	-	-
Vanadium	0.00119	<0.001	0.0119	<0.01	-	-	-
Zinc	0.0251	<0.001	0.251	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.16
Conductivity (µS/cm)	6,180.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569542
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-F5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	0.868	<0.5	8.68	<5	-	-	-
Aromatics >EC16-EC21	7.88	<0.5	78.8	<5	-	-	-
Aromatics >EC21-EC35	0.561	<0.5	5.61	<5	-	-	-
Aromatics >EC16-EC35	8.44	<0.5	84.4	<5	-	-	-
Total Aromatics >EC12-EC35	9.31	<0.5	93.1	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	9.31	<0.01	93.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000171	<0.00001	0.000171	<0.0001	-	-	-
Naphthalene (diss.filt)	0.00048	<0.00001	0.0048	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00891	<0.000005	0.0891	<0.00005	-	-	-
Anthracene (diss.filt)	11.1	<0.000005	111	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0938	<0.000005	0.938	<0.00005	-	-	-
Pyrene (diss.filt)	0.00957	<0.000005	0.0957	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00494	<0.001	0.0494	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000164	<0.000005	0.00164	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000058	<0.000002	0.00058	<0.00002	-	-	-
Copper	0.0166	<0.0003	0.166	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Lead	0.00217	<0.0002	0.0217	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000437	<0.000005	0.000437	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.53
Conductivity (µS/cm)	5,070.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569542
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-F5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	11.2	<0.000082	112	<0.00082	-	-	-
Nickel	0.00192	<0.0004	0.0192	<0.004	-	-	-
Selenium	0.00106	<0.001	0.0106	<0.01	-	-	-
Vanadium	0.00129	<0.001	0.0129	<0.01	-	-	-
Zinc	0.00346	<0.001	0.0346	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	12.53
Conductivity (µS/cm)	5,070.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569551
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-E5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00281	<0.0005	0.0281	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000032	<0.000005	0.00032	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000156	<0.000005	0.000156	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000048	<0.000005	0.00048	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000368	<0.000005	0.000368	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0047	<0.0003	0.047	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000205	<0.0002	0.00205	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.23
Conductivity (µS/cm)	123.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569551
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-E5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000132	<0.000082	0.00132	<0.00082	-	-	-
Nickel	0.000729	<0.0004	0.00729	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0134	<0.001	0.134	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0585	<0.019	0.585	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.23
Conductivity (µS/cm)	123.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.6
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569555
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-E5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.23	<0.2	2.3	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000171	<0.00001	0.000171	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000387	<0.00001	0.000387	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00132	<0.0005	0.0132	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000186	<0.000005	0.000186	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000248	<0.000005	0.00248	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000896	<0.000005	0.000896	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00667	<0.001	0.0667	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0346	<0.0003	0.346	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.82
Conductivity (µS/cm)	1,210.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.6
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569555
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-E5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000538	<0.000082	0.00538	<0.00082	-	-	-
Nickel	0.00351	<0.0004	0.0351	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0302	<0.001	0.302	<0.01	-	-	-
Zinc	0.00174	<0.001	0.0174	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.82
Conductivity (µS/cm)	1,210.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569560
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-E5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.236	<0.2	2.36	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.000896	<0.0005	0.00896	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00145	<0.001	0.0145	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0116	<0.0003	0.116	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.21
Conductivity (µS/cm)	447.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569560
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-E5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	0.00115	<0.0004	0.0115	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.179	<0.001	1.79	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.21
Conductivity (µS/cm)	447.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569571
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-D5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000538	<0.00001	0.000538	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00244	<0.0005	0.0244	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000602	<0.000005	0.000602	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00033	<0.000005	0.0033	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000447	<0.000005	0.000447	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000121	<0.000005	0.00121	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Chrysene (diss.filt)	0.000139	<0.000005	0.00139	<0.00005	-	-	-
Pyrene (diss.filt)	0.000252	<0.000005	0.00252	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000275	<0.000005	0.00275	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000167	<0.000002	0.00167	<0.00002	-	-	-
Copper	0.00314	<0.0003	0.0314	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000415	<0.000005	0.000415	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000186	<0.000005	0.00186	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.000139	<0.000005	0.00139	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.68
Conductivity (µS/cm)	145.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569571
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-D5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00208	<0.000082	0.0208	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00572	<0.001	0.0572	<0.01	-	-	-
Zinc	0.00135	<0.001	0.0135	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.68
Conductivity (µS/cm)	145.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569575
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000318	<0.00001	0.000318	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Arsenic	0.00452	<0.0005	0.0452	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000196	<0.000005	0.000196	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000179	<0.000005	0.00179	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000343	<0.000005	0.000343	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000098	<0.000005	0.00098	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000314	<0.000005	0.000314	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000726	<0.000005	0.000726	<0.00005	-	-	-
Pyrene (diss.filt)	0.000217	<0.000005	0.00217	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000571	<0.000005	0.000571	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000516	<0.000005	0.000516	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000594	<0.000002	0.000594	<0.00002	-	-	-
Copper	0.00719	<0.0003	0.0719	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000397	<0.000005	0.000397	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000362	<0.000005	0.000362	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.76
Conductivity (µS/cm)	187.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569575
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00105	<0.000082	0.0105	<0.00082	-	-	-
Nickel	0.000492	<0.0004	0.00492	<0.004	-	-	-
Selenium	0.004	<0.001	0.04	<0.01	-	-	-
Vanadium	0.0983	<0.001	0.983	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.76
Conductivity (µS/cm)	187.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569579
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-D5
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000201	<0.00001	0.00201	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.00061	<0.000005	0.0061	<0.00005	-	-	-
Anthracene (diss.filt)	0.000162	<0.000005	0.00162	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.001	<0.000005	0.01	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000244	<0.000005	0.000244	<0.00005	-	-	-
Chrysene (diss.filt)	0.000074	<0.000005	0.00074	<0.00005	-	-	-
Pyrene (diss.filt)	0.000679	<0.000005	0.00679	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000546	<0.000005	0.000546	<0.00005	-	-	-
Chromium	0.00204	<0.001	0.0204	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000272	<0.000005	0.000272	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000133	<0.000005	0.000133	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000159	<0.000002	0.000159	<0.00002	-	-	-
Copper	0.00922	<0.0003	0.0922	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	951.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569579
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-D5
Depth (m)	1.60 - 1.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00298	<0.000082	0.0298	<0.00082	-	-	-
Nickel	0.0012	<0.0004	0.012	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0102	<0.001	0.102	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	951.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569592
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-C5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000177	<0.00001	0.000177	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00148	<0.0005	0.0148	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.00000782	<0.000005	0.0000782	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000693	<0.000005	0.000693	<0.00005	-	-	-
Anthracene (diss.filt)	0.000014	<0.000005	0.00014	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000506	<0.000005	0.000506	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.00000766	<0.000005	0.0000766	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Pyrene (diss.filt)	0.000057	<0.000005	0.00057	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.00000523	<0.000005	0.0000523	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000503	<0.000005	0.000503	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000258	<0.000002	0.000258	<0.00002	-	-	-
Copper	0.00149	<0.0003	0.0149	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Lead	0.000264	<0.0002	0.00264	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000188	<0.000005	0.000188	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.60
Conductivity (µS/cm)	184.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569592
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-C5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000395	<0.000082	0.00395	<0.00082	-	-	-
Nickel	0.000513	<0.0004	0.00513	<0.004	-	-	-
Selenium	0.00171	<0.001	0.0171	<0.01	-	-	-
Vanadium	0.00347	<0.001	0.0347	<0.01	-	-	-
Zinc	0.00199	<0.001	0.0199	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.327	<0.019	3.27	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.60
Conductivity (µS/cm)	184.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569601
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-C5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000167	<0.00001	0.000167	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000455	<0.00001	0.000455	<0.0001	-	-	-
Total Cyanide (W)	0.11	<0.05	1.1	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Arsenic	0.000822	<0.0005	0.00822	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000081	<0.000005	0.00081	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000631	<0.000005	0.000631	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000803	<0.000005	0.000803	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	0.00141	<0.001	0.0141	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0137	<0.0003	0.137	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000305	<0.0002	0.00305	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.60
Conductivity (µS/cm)	798.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569601
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-C5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000327	<0.000082	0.00327	<0.00082	-	-	-
Nickel	0.00111	<0.0004	0.0111	<0.004	-	-	-
Selenium	0.00104	<0.001	0.0104	<0.01	-	-	-
Vanadium	0.0459	<0.001	0.459	<0.01	-	-	-
Zinc	0.00845	<0.001	0.0845	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.516	<0.019	5.16	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.60
Conductivity (µS/cm)	798.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569608
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-B5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.000395	<0.00001	0.00395	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000436	<0.000005	0.000436	<0.00005	-	-	-
Arsenic	0.00518	<0.0005	0.0518	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000524	<0.000005	0.000524	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000963	<0.000005	0.00963	<0.00005	-	-	-
Anthracene (diss.filt)	0.000147	<0.000005	0.00147	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000734	<0.000005	0.00734	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000152	<0.000005	0.00152	<0.00005	-	-	-
Chrysene (diss.filt)	0.000203	<0.000005	0.00203	<0.00005	-	-	-
Pyrene (diss.filt)	0.000576	<0.000005	0.00576	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Chromium	0.00132	<0.001	0.0132	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.000262	<0.000005	0.00262	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.000184	<0.000002	0.00184	<0.00002	-	-	-
Copper	0.00343	<0.0003	0.0343	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000444	<0.000005	0.000444	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.000187	<0.000005	0.00187	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.23
Conductivity (µS/cm)	153.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569608
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-B5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.00434	<0.000082	0.0434	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00175	<0.001	0.0175	<0.01	-	-	-
Vanadium	0.038	<0.001	0.38	<0.01	-	-	-
Zinc	0.00121	<0.001	0.0121	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.23
Conductivity (µS/cm)	153.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569616
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-B5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	0.814	<0.2	8.14	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000662	<0.00001	0.000662	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000189	<0.000005	0.000189	<0.00005	-	-	-
Arsenic	0.000886	<0.0005	0.00886	<0.005	-	-	-
Acenaphthylene (diss.filt)	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000162	<0.000005	0.000162	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000583	<0.000005	0.000583	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000204	<0.000005	0.000204	<0.00005	-	-	-
Pyrene (diss.filt)	0.000208	<0.000005	0.00208	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Chromium	0.00142	<0.001	0.0142	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.00000761	<0.000002	0.0000761	<0.00002	-	-	-
Copper	0.00719	<0.0003	0.0719	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.06
Conductivity (µS/cm)	400.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569616
Sampled Date	18-Oct-2018
Customer Sample Ref.	3C-B5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000559	<0.000082	0.00559	<0.00082	-	-	-
Nickel	0.000968	<0.0004	0.00968	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0655	<0.001	0.655	<0.01	-	-	-
Zinc	0.00781	<0.001	0.0781	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.199	<0.019	1.99	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.06
Conductivity (µS/cm)	400.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569624
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00157	<0.0005	0.0157	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000237	<0.000005	0.000237	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000319	<0.000005	0.000319	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000102	<0.000002	0.000102	<0.00002	-	-	-
Copper	0.00162	<0.0003	0.0162	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	158.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569624
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00397	<0.001	0.0397	<0.01	-	-	-
Vanadium	0.0394	<0.001	0.394	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.31
Conductivity (µS/cm)	158.00
Temperature (°C)	19.20
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569632
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000109	<0.00001	0.000109	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.00000963	<0.000005	0.0000963	<0.00005	-	-	-
Arsenic	0.00391	<0.0005	0.0391	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000409	<0.000005	0.000409	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.000031	<0.000005	0.00031	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	0.0000202	<0.000005	0.000202	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000364	<0.000005	0.000364	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Chromium	0.00105	<0.001	0.0105	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	0.0000444	<0.000005	0.000444	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	0.0000241	<0.000005	0.000241	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	0.0000267	<0.000002	0.000267	<0.00002	-	-	-
Copper	0.00152	<0.0003	0.0152	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	0.0000373	<0.000005	0.000373	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	0.0000386	<0.000005	0.000386	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.99
Conductivity (µS/cm)	161.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569632
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000364	<0.000082	0.00364	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00409	<0.001	0.0409	<0.01	-	-	-
Vanadium	0.0379	<0.001	0.379	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.99
Conductivity (µS/cm)	161.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569636
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Naphthalene (diss.filt)	0.0000471	<0.00001	0.000471	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Acenaphthene (diss.filt)	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Arsenic	0.00211	<0.0005	0.0211	<0.005	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene (diss.filt)	0.0000662	<0.000005	0.000662	<0.00005	-	-	-
Anthracene (diss.filt)	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Phenanthrene (diss.filt)	0.0000698	<0.000005	0.000698	<0.00005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.000016	<0.000005	0.00016	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000547	<0.000005	0.000547	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.00533	<0.0003	0.0533	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.28
Conductivity (µS/cm)	304.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

12/11/2018 13:12:07

13:11:31 12/11/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	181020-29
Lab Sample Number(s)	18569636
Sampled Date	18-Oct-2018
Customer Sample Ref.	4C-E5
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH 16 EPA Total by GCMS (diss.filt)	0.000281	<0.000082	0.00281	<0.00082	-	-	-
Nickel	0.000591	<0.0004	0.00591	<0.004	-	-	-
Selenium	0.00335	<0.001	0.0335	<0.01	-	-	-
Vanadium	0.0734	<0.001	0.734	<0.01	-	-	-
Zinc	0.00467	<0.001	0.0467	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.28
Conductivity (µS/cm)	304.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

12/11/2018 13:12:07

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Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Test Completion Dates

Lab Sample No(s)	18569608	18569616	18569620	18569592	18569601	18569571	18569579	18569583	18569551	18569555
Customer Sample Ref.	3C-B5	3C-B5	3C-B5-V	3C-C5	3C-C5	3C-D5	3C-D5	3C-D5-V	3C-E5	3C-E5
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40	0.50 - 0.50	1.00 - 1.00	0.80 - 0.80	1.60 - 1.60	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		27-Oct-2018			31-Oct-2018	27-Oct-2018				31-Oct-2018
Ammoniacal Nitrogen	30-Oct-2018	30-Oct-2018		30-Oct-2018	30-Oct-2018	31-Oct-2018	31-Oct-2018		31-Oct-2018	30-Oct-2018
Ammonium Soil by Titration	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018
Anions by Kone (soil)		30-Oct-2018			30-Oct-2018	30-Oct-2018				30-Oct-2018
Asbestos ID in Solid Samples		05-Nov-2018			05-Nov-2018	05-Nov-2018				05-Nov-2018
CEN 10:1 Leachate (1 Stage)	25-Oct-2018	24-Oct-2018		24-Oct-2018	24-Oct-2018	25-Oct-2018	24-Oct-2018		24-Oct-2018	25-Oct-2018
CEN Readings	27-Oct-2018	27-Oct-2018		27-Oct-2018	27-Oct-2018	30-Oct-2018	31-Oct-2018		30-Oct-2018	27-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	07-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	06-Nov-2018	07-Nov-2018
Dissolved Metals by ICP-MS	01-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018		01-Nov-2018	31-Oct-2018
EPH CWG (Aliphatic) Filtered GC (W)	30-Oct-2018	30-Oct-2018		31-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	31-Oct-2018
EPH CWG (Aliphatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
EPH CWG (Aromatic) Filtered GC (W)	30-Oct-2018	30-Oct-2018		31-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	31-Oct-2018
EPH CWG (Aromatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
GRO by GC-FID (S)	01-Nov-2018	05-Nov-2018	01-Nov-2018	05-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018	05-Nov-2018	01-Nov-2018	01-Nov-2018
GRO by GC-FID (W)	30-Oct-2018	30-Oct-2018		31-Oct-2018	01-Nov-2018	31-Oct-2018	31-Oct-2018		31-Oct-2018	31-Oct-2018
Mercury Dissolved	01-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018		02-Nov-2018	02-Nov-2018
Metals in solid samples by OES	06-Nov-2018	26-Oct-2018	02-Nov-2018	01-Nov-2018	31-Oct-2018	26-Oct-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	31-Oct-2018
PAH by GCMS	02-Nov-2018	02-Nov-2018	30-Oct-2018	25-Oct-2018	29-Oct-2018	25-Oct-2018	29-Oct-2018	29-Oct-2018	31-Oct-2018	24-Oct-2018
PAH in waters by GC-MS (diss.filt)	29-Oct-2018	29-Oct-2018		30-Oct-2018	30-Oct-2018	02-Nov-2018	02-Nov-2018		02-Nov-2018	30-Oct-2018
pH	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018
pH Value of Filtered Water	30-Oct-2018	30-Oct-2018		30-Oct-2018	30-Oct-2018	01-Nov-2018	01-Nov-2018		01-Nov-2018	30-Oct-2018
Phenols by HPLC (S)	02-Nov-2018	05-Nov-2018	29-Oct-2018	05-Nov-2018	02-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	30-Oct-2018	06-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	07-Nov-2018	06-Nov-2018
Total Sulphate		30-Oct-2018			30-Oct-2018	26-Oct-2018				30-Oct-2018
Total Sulphur		26-Oct-2018			26-Oct-2018	26-Oct-2018				26-Oct-2018
TPH CWG Filtered (W)	30-Oct-2018	30-Oct-2018		31-Oct-2018	01-Nov-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	31-Oct-2018
TPH CWG GC (S)	01-Nov-2018	05-Nov-2018	01-Nov-2018	05-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018	05-Nov-2018	01-Nov-2018	02-Nov-2018
VOC MS (S)	01-Nov-2018	05-Nov-2018	01-Nov-2018	03-Nov-2018	03-Nov-2018	01-Nov-2018	02-Nov-2018	03-Nov-2018	01-Nov-2018	05-Nov-2018

Lab Sample No(s)	18569560	18569439	18569443	18569632	18569636	18569575	18569624	18569400	18569462	18569525
Customer Sample Ref.	3C-E5	4C-E2	4C-E2	4C-E5	4C-E5	4C-E6	4C-E6	4C-E7	4C-E7	4C-E7
AGS Ref.										
Depth	2.00 - 2.00	0.50 - 0.50	0.70 - 0.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	07-Nov-2018		07-Nov-2018		07-Nov-2018	06-Nov-2018	27-Oct-2018	31-Oct-2018	31-Oct-2018	
Ammoniacal Nitrogen	31-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	30-Oct-2018
Ammonium Soil by Titration	05-Nov-2018	02-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	06-Nov-2018
Anions by Kone (soil)	30-Oct-2018		30-Oct-2018		30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	
Asbestos ID in Solid Samples	05-Nov-2018		05-Nov-2018		05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	
Asbestos Quantification - Full	06-Nov-2018									
CEN 10:1 Leachate (1 Stage)	24-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018	24-Oct-2018	25-Oct-2018
CEN Readings	31-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	27-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	07-Nov-2018	07-Nov-2018	07-Nov-2018	12-Nov-2018	12-Nov-2018	06-Nov-2018	12-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018
Dissolved Metals by ICP-MS	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018
EPH CWG (Aliphatic) Filtered GC (W)	05-Nov-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018
EPH CWG (Aliphatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) Filtered GC (W)	05-Nov-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018
EPH CWG (Aromatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018
GRO by GC-FID (S)	01-Nov-2018	03-Nov-2018	01-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	03-Nov-2018	01-Nov-2018
GRO by GC-FID (W)	31-Oct-2018	30-Oct-2018	30-Oct-2018	01-Nov-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	30-Oct-2018
Mercury Dissolved	02-Nov-2018	01-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	29-Oct-2018
Metals in solid samples by OES	31-Oct-2018	30-Oct-2018	31-Oct-2018	02-Nov-2018	31-Oct-2018	31-Oct-2018	26-Oct-2018	31-Oct-2018	31-Oct-2018	30-Oct-2018
PAH by GCMS	29-Oct-2018	29-Oct-2018	31-Oct-2018	26-Oct-2018	29-Oct-2018	25-Oct-2018	29-Oct-2018	26-Oct-2018	29-Oct-2018	25-Oct-2018
PAH in waters by GC-MS (diss.filt)	02-Nov-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	30-Oct-2018
pH	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	06-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018
pH Value of Filtered Water	01-Nov-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	30-Oct-2018
Phenols by HPLC (S)	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	06-Nov-2018	06-Nov-2018	06-Nov-2018	31-Oct-2018	06-Nov-2018	31-Oct-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
Total Sulphate	30-Oct-2018		30-Oct-2018		30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	
Total Sulphur	26-Oct-2018		26-Oct-2018		01-Nov-2018	26-Oct-2018	25-Oct-2018	26-Oct-2018	25-Oct-2018	
TPH CWG Filtered (W)	05-Nov-2018	30-Oct-2018	30-Oct-2018	01-Nov-2018	30-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018
TPH CWG GC (S)	01-Nov-2018	03-Nov-2018	02-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	03-Nov-2018	01-Nov-2018
VOC MS (S)	01-Nov-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	04-Nov-2018	01-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Lab Sample No(s)	18569566	18569646	18569628	18569533	18569538	18569542	18569547	18569504	18569512	18569520
Customer Sample Ref.	3C-E5-V	4C-E5-V	4C-E6-V	3C-F5	3C-F5	3C-F5	3C-F5-V	3C-G4	3C-G4	3C-G4
AGS Ref.										
Depth	3.40 - 3.40	2.00 - 2.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)				31-Oct-2018	31-Oct-2018				31-Oct-2018	31-Oct-2018
Ammoniacal Nitrogen				31-Oct-2018	31-Oct-2018	31-Oct-2018		31-Oct-2018	30-Oct-2018	30-Oct-2018
Ammonium Soil by Titration	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018
Anions by Kone (soil)				30-Oct-2018	30-Oct-2018				30-Oct-2018	30-Oct-2018
Asbestos ID in Solid Samples				05-Nov-2018	05-Nov-2018				05-Nov-2018	05-Nov-2018
CEN 10:1 Leachate (1 Stage)				24-Oct-2018	25-Oct-2018	25-Oct-2018		25-Oct-2018	25-Oct-2018	24-Oct-2018
CEN Readings				30-Oct-2018	31-Oct-2018	31-Oct-2018		31-Oct-2018	27-Oct-2018	27-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	07-Nov-2018	06-Nov-2018	12-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	29-Oct-2018	06-Nov-2018	30-Oct-2018	12-Nov-2018
Dissolved Metals by ICP-MS				01-Nov-2018	01-Nov-2018	01-Nov-2018		01-Nov-2018	02-Nov-2018	01-Nov-2018
EPH CWG (Aliphatic) Filtered GC (W)				05-Nov-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	31-Oct-2018	30-Oct-2018
EPH CWG (Aliphatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018
EPH CWG (Aromatic) Filtered GC (W)				05-Nov-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	31-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018
GRO by GC-FID (S)	03-Nov-2018	03-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018
GRO by GC-FID (W)				31-Oct-2018	31-Oct-2018	31-Oct-2018		31-Oct-2018	30-Oct-2018	30-Oct-2018
Mercury Dissolved				02-Nov-2018	01-Nov-2018	01-Nov-2018		02-Nov-2018	01-Nov-2018	01-Nov-2018
Metals in solid samples by OES	29-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	31-Oct-2018	26-Oct-2018
PAH by GCMS	31-Oct-2018	25-Oct-2018	30-Oct-2018	29-Oct-2018	05-Nov-2018	29-Oct-2018	30-Oct-2018	25-Oct-2018	05-Nov-2018	29-Oct-2018
PAH in waters by GC-MS (diss.filt)				02-Nov-2018	02-Nov-2018	02-Nov-2018		02-Nov-2018	30-Oct-2018	29-Oct-2018
pH	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	06-Nov-2018
pH Value of Filtered Water				01-Nov-2018	01-Nov-2018	01-Nov-2018		01-Nov-2018	30-Oct-2018	30-Oct-2018
Phenols by HPLC (S)	05-Nov-2018	05-Nov-2018	02-Nov-2018	29-Oct-2018	29-Oct-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	29-Oct-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	24-Oct-2018	23-Oct-2018	24-Oct-2018	23-Oct-2018
Total Organic Carbon	06-Nov-2018	31-Oct-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018
Total Sulphate				30-Oct-2018	30-Oct-2018				30-Oct-2018	30-Oct-2018
Total Sulphur				26-Oct-2018	26-Oct-2018				26-Oct-2018	26-Oct-2018
TPH CWG Filtered (W)				05-Nov-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	31-Oct-2018	30-Oct-2018
TPH CWG GC (S)	03-Nov-2018	03-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018
VOC MS (S)	04-Nov-2018	04-Nov-2018	04-Nov-2018	03-Nov-2018	03-Nov-2018	01-Nov-2018	03-Nov-2018	03-Nov-2018	06-Nov-2018	03-Nov-2018

Lab Sample No(s)	18569447	18569451	18569455	18569415	18569420	18569529	18569469	18569427	18569496	18569500
Customer Sample Ref.	3C-G5	3C-G5	3C-G5	4C-G8	4C-G8	3C-G4-V	3C-G5-V	4C-G8-V	3C-I3	3C-I3
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	3.10 - 3.10	3.00 - 3.00	2.60 - 2.60	0.50 - 0.50	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	31-Oct-2018		07-Nov-2018	31-Oct-2018	06-Nov-2018				27-Oct-2018	31-Oct-2018
Ammoniacal Nitrogen	30-Oct-2018	29-Oct-2018	31-Oct-2018	31-Oct-2018	30-Oct-2018				30-Oct-2018	31-Oct-2018
Ammonium Soil by Titration	02-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	05-Nov-2018	05-Nov-2018
Anions by Kone (soil)	26-Oct-2018		30-Oct-2018	01-Nov-2018	30-Oct-2018				30-Oct-2018	30-Oct-2018
Asbestos ID in Solid Samples	05-Nov-2018		05-Nov-2018	05-Nov-2018	05-Nov-2018				05-Nov-2018	05-Nov-2018
CEN 10:1 Leachate (1 Stage)	25-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	25-Oct-2018				25-Oct-2018	25-Oct-2018
CEN Readings	27-Oct-2018	27-Oct-2018	31-Oct-2018	31-Oct-2018	27-Oct-2018				27-Oct-2018	31-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	06-Nov-2018	06-Nov-2018	06-Nov-2018	07-Nov-2018	02-Nov-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	06-Nov-2018	07-Nov-2018
Dissolved Metals by ICP-MS	01-Nov-2018	31-Oct-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018				01-Nov-2018	01-Nov-2018
EPH CWG (Aliphatic) Filtered GC (W)	31-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018				31-Oct-2018	05-Nov-2018
EPH CWG (Aliphatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
EPH CWG (Aromatic) Filtered GC (W)	31-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018				31-Oct-2018	05-Nov-2018
EPH CWG (Aromatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
GRO by GC-FID (S)	04-Nov-2018	01-Nov-2018	05-Nov-2018	01-Nov-2018	03-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	03-Nov-2018	02-Nov-2018
GRO by GC-FID (W)	30-Oct-2018	30-Oct-2018	31-Oct-2018	31-Oct-2018	30-Oct-2018				30-Oct-2018	31-Oct-2018
Mercury Dissolved	02-Nov-2018	01-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018				01-Nov-2018	01-Nov-2018
Metals in solid samples by OES	26-Oct-2018	30-Oct-2018	01-Nov-2018	26-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	26-Oct-2018	26-Oct-2018
PAH by GCMS	29-Oct-2018	31-Oct-2018	24-Oct-2018	29-Oct-2018	31-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	02-Nov-2018	29-Oct-2018
PAH in waters by GC-MS (diss.filt)	30-Oct-2018	30-Oct-2018	02-Nov-2018	02-Nov-2018	30-Oct-2018				30-Oct-2018	02-Nov-2018
pH	06-Nov-2018	05-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	06-Nov-2018
pH Value of Filtered Water	30-Oct-2018	30-Oct-2018	01-Nov-2018	01-Nov-2018	30-Oct-2018				30-Oct-2018	01-Nov-2018
Phenols by HPLC (S)	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	05-Nov-2018	02-Nov-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	06-Nov-2018	31-Oct-2018	31-Oct-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	06-Nov-2018	02-Nov-2018
Total Sulphate	30-Oct-2018		30-Oct-2018	30-Oct-2018	30-Oct-2018				26-Oct-2018	30-Oct-2018
Total Sulphur	25-Oct-2018		26-Oct-2018	25-Oct-2018	26-Oct-2018				26-Oct-2018	25-Oct-2018
TPH CWG Filtered (W)	31-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018				31-Oct-2018	05-Nov-2018
TPH CWG GC (S)	04-Nov-2018	01-Nov-2018	05-Nov-2018	02-Nov-2018	03-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	03-Nov-2018	02-Nov-2018
VOC MS (S)	05-Nov-2018	31-Oct-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	04-Nov-2018	03-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181020-29	**Client Reference:**		**Report Number:**	480661
Location:	Llanwern	**Order Number:**	LLA492	**Superseded Report:**	479955

Lab Sample No(s)	18569476	18569480	18569484	18569492	18569431	18569435
Customer Sample Ref.	3C-J3	3C-J3	3C-J3	3C-J3-V	4C-K2	4C-K2
AGS Ref.						
Depth	0.50 - 0.50	1.50 - 1.50	2.00 - 2.00	3.40 - 3.40	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		07-Nov-2018	31-Oct-2018		27-Oct-2018	
Ammoniacal Nitrogen	31-Oct-2018	30-Oct-2018	31-Oct-2018		30-Oct-2018	30-Oct-2018
Ammonium Soil by Titration	06-Nov-2018	05-Nov-2018	02-Nov-2018	01-Nov-2018	05-Nov-2018	05-Nov-2018
Anions by Kone (soil)		30-Oct-2018	26-Oct-2018		30-Oct-2018	
Asbestos ID in Solid Samples		05-Nov-2018	05-Nov-2018		05-Nov-2018	
Asbestos Quantification - Full					06-Nov-2018	
CEN 10:1 Leachate (1 Stage)	25-Oct-2018	25-Oct-2018	25-Oct-2018		24-Oct-2018	25-Oct-2018
CEN Readings	31-Oct-2018	27-Oct-2018	31-Oct-2018		27-Oct-2018	27-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	06-Nov-2018	06-Nov-2018	07-Nov-2018	25-Oct-2018	12-Nov-2018	06-Nov-2018
Dissolved Metals by ICP-MS	01-Nov-2018	01-Nov-2018	01-Nov-2018		02-Nov-2018	01-Nov-2018
EPH CWG (Aliphatic) Filtered GC (W)	05-Nov-2018	31-Oct-2018	05-Nov-2018		30-Oct-2018	30-Oct-2018
EPH CWG (Aliphatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
EPH CWG (Aromatic) Filtered GC (W)	05-Nov-2018	31-Oct-2018	05-Nov-2018		30-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018
GRO by GC-FID (S)	04-Nov-2018	01-Nov-2018	03-Nov-2018	01-Nov-2018	01-Nov-2018	02-Nov-2018
GRO by GC-FID (W)	31-Oct-2018	30-Oct-2018	31-Oct-2018		30-Oct-2018	30-Oct-2018
Mercury Dissolved	02-Nov-2018	02-Nov-2018	01-Nov-2018		01-Nov-2018	02-Nov-2018
Metals in solid samples by OES	29-Oct-2018	31-Oct-2018	26-Oct-2018	31-Oct-2018	26-Oct-2018	29-Oct-2018
PAH by GCMS	29-Oct-2018	25-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	25-Oct-2018
PAH in waters by GC-MS (diss.filt)	02-Nov-2018	30-Oct-2018	02-Nov-2018		29-Oct-2018	29-Oct-2018
pH	05-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018
pH Value of Filtered Water	01-Nov-2018	30-Oct-2018	01-Nov-2018		30-Oct-2018	30-Oct-2018
Phenols by HPLC (S)	05-Nov-2018	05-Nov-2018	02-Nov-2018	29-Oct-2018	05-Nov-2018	05-Nov-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	31-Oct-2018	31-Oct-2018	06-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018
Total Sulphate		30-Oct-2018	31-Oct-2018		26-Oct-2018	
Total Sulphur		26-Oct-2018	26-Oct-2018		25-Oct-2018	
TPH CWG Filtered (W)	05-Nov-2018	31-Oct-2018	05-Nov-2018		30-Oct-2018	30-Oct-2018
TPH CWG GC (S)	04-Nov-2018	01-Nov-2018	03-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018
VOC MS (S)	05-Nov-2018	31-Oct-2018	05-Nov-2018	01-Nov-2018	05-Nov-2018	03-Nov-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
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Coed Darcy
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Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	14 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181023-12
Your Reference:	
Location:	Llanwern
Report No:	480979

This report has been revised and directly supersedes 480401 in its entirety.

We received 46 samples on Tuesday October 23, 2018 and 46 of these samples were scheduled for analysis which was completed on Wednesday November 14, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18580502	3C-B3		0.50 - 0.50	19/10/2018
18580512	3C-B3		1.00 - 1.00	19/10/2018
18580520	3C-B3		1.90 - 1.90	19/10/2018
18580468	3C-B4		0.70 - 0.70	19/10/2018
18580473	3C-B4		1.40 - 1.40	19/10/2018
18580537	3C-B3-V		2.40 - 2.40	19/10/2018
18580477	3C-B4-V		2.40 - 2.40	19/10/2018
18580548	3C-C3		0.50 - 0.50	19/10/2018
18580558	3C-C3		1.00 - 1.00	19/10/2018
18580566	3C-C3		1.50 - 1.50	19/10/2018
18580481	3C-C4		0.70 - 0.70	19/10/2018
18580488	3C-C4		1.40 - 1.40	19/10/2018
18580576	3C-C3-V		2.20 - 2.20	19/10/2018
18580494	3C-C4-V		2.40 - 2.40	19/10/2018
18580587	3C-D3		0.80 - 0.80	19/10/2018
18580592	3C-D3		1.50 - 1.50	19/10/2018
18580607	3C-D4		0.50 - 0.50	19/10/2018
18580618	3C-D4		1.00 - 1.00	19/10/2018
18580599	3C-D3-V		1.90 - 1.90	19/10/2018
18580635	3C-D4-V		2.50 - 2.50	19/10/2018
18580674	3C-E3		0.50 - 0.50	19/10/2018
18580683	3C-E3		1.00 - 1.00	19/10/2018
18580645	3C-E4		0.50 - 0.50	19/10/2018
18580655	3C-E4		1.00 - 1.00	19/10/2018
18580692	3C-E3-V		2.70 - 2.70	19/10/2018
18580665	3C-E4-V		3.00 - 3.00	19/10/2018
18580440	3C-H2		0.50 - 0.50	19/10/2018
18580444	3C-H2		1.00 - 1.00	19/10/2018
18580454	3C-H2		2.00 - 2.00	19/10/2018
18580462	3C-H2-V		2.30 - 2.30	19/10/2018
18580419	3C-I2		0.50 - 0.50	19/10/2018
18580423	3C-I2		1.00 - 1.00	19/10/2018
18580427	3C-I2		2.00 - 2.00	19/10/2018
18580434	3C-I2-V		2.30 - 2.30	19/10/2018
18580405	3C-J2		0.50 - 0.50	19/10/2018
18580410	3C-J2		1.00 - 1.00	19/10/2018
18580415	3C-J2-V		1.30 - 1.30	19/10/2018
18580716	3C-K2		0.50 - 0.50	19/10/2018
18580725	3C-K2		1.00 - 1.00	19/10/2018
18580736	3C-K2-V		1.20 - 1.20	19/10/2018
18580626	3C-L2		0.50 - 0.50	19/10/2018
18580700	3C-L2		1.00 - 1.00	19/10/2018
18580708	3C-L2-V		1.50 - 1.50	19/10/2018
18580400	3C-M2		0.50 - 0.50	19/10/2018
18580458	3C-M2		1.00 - 1.00	19/10/2018
18580528	3C-M2-V		1.40 - 1.40	19/10/2018

Maximum Sample/Coolbox Temperature (°C) : **7.4**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	18580502			18580512			18580520			18580468			18580473			18580537			18580477	
			Customer Sample Reference	3C-B3			3C-B3			3C-B3			3C-B4			3C-B4			3C-B3-V			3C-B4-V	
			AGS Reference																				
			Depth (m)	0.50 - 0.50			1.00 - 1.00			1.90 - 1.90			0.70 - 0.70			1.40 - 1.40			2.40 - 2.40			2.40 - 2.40	
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 17			X						X			X									
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 32		X			X			X			X			X							
Ammonium Soil by Titration	All	NDPs: 0 Tests: 46			X			X			X			X			X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 17			X						X			X									
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 17		X						X			X										
Asbestos Quantification - Full	All	NDPs: 0 Tests: 5		X																			
CEN Readings	All	NDPs: 0 Tests: 32		X			X			X			X			X							
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 78		X	X		X	X		X	X		X	X		X	X		X		X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 32		X			X			X			X			X							
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X							
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 46			X			X			X			X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X							
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 46			X			X			X			X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 46				X			X			X			X			X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 32		X			X			X			X			X							

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
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PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | | |

18580587	3C-D3		0.80 - 0.80	250g Amber Jar (ALE210)	1kg TUB	S
					X	
				X		
18580494	3C-C4-V		2.40 - 2.40	60g VOC (ALE215)		S
				X		
				X		
				X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18580587	18580592			18580607			18580618		18580599		18580635		18580674			18580683	
Customer Sample Reference			3C-D3	3C-D3			3C-D4			3C-D4		3C-D3-V		3C-D4-V		3C-E3			3C-E3	
AGS Reference																				
Depth (m)			0.80 - 0.80	1.50 - 1.50			0.50 - 0.50			1.00 - 1.00		1.90 - 1.90		2.50 - 2.50		0.50 - 0.50			1.00 - 1.00	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 17						X													X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 32		X			X			X							X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 46			X			X			X		X		X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 17						X													X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 17					X													X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 5																		X	
CEN Readings	All	NDPs: 0 Tests: 32		X			X			X							X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 78		X	X		X	X		X	X		X		X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 32		X			X			X							X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32		X			X			X							X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 46			X			X			X		X		X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32		X			X			X							X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 46			X			X			X		X		X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 46	X			X			X			X		X		X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 32		X			X			X							X			X	

18580462	3C-H2-V		2.30 - 2.30	250g Amber Jar (ALE210)	S				x					x			x			x			
18580454	3C-H2		2.00 - 2.00	60g VOC (ALE215)	S																x		
				250g Amber Jar (ALE210)	S	x			x	x				x			x			x			
				1kg TUB	S		x				x		x	x	x	x			x				x
18580444	3C-H2		1.00 - 1.00	60g VOC (ALE215)	S																x		
				250g Amber Jar (ALE210)	S				x					x			x			x			
				1kg TUB	S		x						x	x	x	x			x				x
18580440	3C-H2		0.50 - 0.50	60g VOC (ALE215)	S																x		
				250g Amber Jar (ALE210)	S	x			x	x				x			x			x			
				1kg TUB	S		x				x		x	x	x	x			x				x
18580665	3C-E4-V		3.00 - 3.00	60g VOC (ALE215)	S																x		
				250g Amber Jar (ALE210)	S				x					x			x			x			
18580692	3C-E3-V		2.70 - 2.70	60g VOC (ALE215)	S																x		
				250g Amber Jar (ALE210)	S				x					x			x			x			
18580655	3C-E4		1.00 - 1.00	60g VOC (ALE215)	S																x		
				250g Amber Jar (ALE210)	S				x					x			x			x			
				1kg TUB	S		x						x	x	x	x			x				x
18580645	3C-E4		0.50 - 0.50	60g VOC (ALE215)	S																x		
				250g Amber Jar (ALE210)	S	x			x	x				x			x			x			
				1kg TUB	S		x				x		x	x	x	x			x				x
18580683	3C-E3		1.00 - 1.00	60g VOC (ALE215)	S																x		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18580587	18580592			18580607			18580618			18580599		18580635		18580674			18580683
Customer Sample Reference			3C-D3	3C-D3			3C-D4			3C-D4			3C-D3-V		3C-D4-V		3C-E3			3C-E3
AGS Reference																				
Depth (m)			0.80 - 0.80	1.50 - 1.50			0.50 - 0.50			1.00 - 1.00			1.90 - 1.90		2.50 - 2.50		0.50 - 0.50			1.00 - 1.00
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 32		X			X			X							X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 46			X			X			X		X		X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 46			X			X			X		X		X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 32		X			X			X							X			X	
pH	All	NDPs: 0 Tests: 46			X			X			X		X		X			X			X
pH Value	All	NDPs: 0 Tests: 32		X			X			X							X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 46			X			X			X		X		X			X			X
Sample description	All	NDPs: 0 Tests: 46			X			X			X		X		X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 46			X			X			X		X		X			X			X
Total Sulphate	All	NDPs: 0 Tests: 17						X													X
Total Sulphur	All	NDPs: 0 Tests: 17						X													X
TPH CWG (W)	All	NDPs: 0 Tests: 32		X			X			X							X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 46			X			X			X		X		X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 46	X			X			X			X		X		X			X		

18580462	3C-H2-V		2.30 - 2.30	250g Amber Jar (ALE210)	S			x		x			x			x		x		x		x	
18580454	3C-H2		2.00 - 2.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x		x			x			x		x		x		x	
				1kg TUB	S		x				x			x							x		
18580444	3C-H2		1.00 - 1.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x		x			x			x		x		x		x	
				1kg TUB	S		x				x			x							x		
18580440	3C-H2		0.50 - 0.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x		x			x			x		x		x		x	
				1kg TUB	S		x				x			x							x		
18580665	3C-E4-V		3.00 - 3.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x		x			x			x		x		x		x	
18580692	3C-E3-V		2.70 - 2.70	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x		x			x			x		x		x		x	
18580655	3C-E4		1.00 - 1.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x		x			x			x		x		x		x	
				1kg TUB	S		x				x			x							x		
18580645	3C-E4		0.50 - 0.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x		x			x			x		x		x		x	
				1kg TUB	S		x				x			x							x		
18580683	3C-E3		1.00 - 1.00	60g VOC (ALE215)	S																		x

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18580462	18580419			18580423		18580427		18580434		18580405			18580410		18580415		
Customer Sample Reference			3C-H2-V	3C-I2			3C-I2		3C-I2		3C-I2-V		3C-J2			3C-J2		3C-J2-V		
AGS Reference																				
Depth (m)			2.30 - 2.30	0.50 - 0.50			1.00 - 1.00		2.00 - 2.00		2.30 - 2.30		0.50 - 0.50			1.00 - 1.00		1.30 - 1.30		
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 17			X					X								X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 32		X			X		X					X			X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 46			X			X		X		X			X			X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 17			X					X								X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 17		X					X								X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 5		X					X								X				
Calorific Value (S)*	All	NDPs: 0 Tests: 2															X				
CEN Readings	All	NDPs: 0 Tests: 32		X			X		X					X			X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 78		X	X		X	X	X	X		X		X	X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 32		X			X		X					X			X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32		X			X		X					X			X				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 46			X			X		X		X			X			X		X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 32		X			X		X					X			X				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 46			X			X		X		X			X			X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 46	X			X		X			X		X			X			X		X

18580458	3C-M2		1.00 - 1.00	250g Amber Jar (ALE210)	S				x						x				x		x			
				1kg TUB	S			x						x	x		x					x			
18580400	3C-M2		0.50 - 0.50	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x			x						x				x			x		
				1kg TUB	S			x				x			x	x		x				x			
18580708	3C-L2-V		1.50 - 1.50	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S				x						x				x			x		
18580700	3C-L2		1.00 - 1.00	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x	x						x				x			x		
				1kg TUB	S			x				x			x	x		x				x			
18580626	3C-L2		0.50 - 0.50	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S				x						x				x			x		
				1kg TUB	S			x							x	x		x				x			
18580736	3C-K2-V		1.20 - 1.20	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S				x						x				x			x		
18580725	3C-K2		1.00 - 1.00	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S				x				x		x				x			x		
				1kg TUB	S			x						x	x	x		x				x			
18580716	3C-K2		0.50 - 0.50	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x	x						x				x			x		
				1kg TUB	S			x				x			x	x		x				x			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
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TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18580462	18580419			18580423		18580427		18580434		18580405			18580410			18580415	
Customer Sample Reference			3C-H2-V	3C-I2			3C-I2		3C-I2		3C-I2-V		3C-J2			3C-J2			3C-J2-V	
AGS Reference																				
Depth (m)			2.30 - 2.30	0.50 - 0.50			1.00 - 1.00		2.00 - 2.00		2.30 - 2.30		0.50 - 0.50			1.00 - 1.00			1.30 - 1.30	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
GRO by GC-FID (W)	All	NDPs: 0 Tests: 32		X			X		X					X			X				
Mercury Dissolved	All	NDPs: 0 Tests: 32		X			X		X					X			X				
Metals in solid samples by OES	All	NDPs: 0 Tests: 46			X			X		X		X			X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 46			X			X		X		X			X			X		X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 32		X			X		X					X			X				
pH	All	NDPs: 0 Tests: 46			X			X		X		X			X			X		X	
pH Value	All	NDPs: 0 Tests: 32		X			X		X					X			X				
Phenols by HPLC (S)	All	NDPs: 0 Tests: 46			X			X		X		X			X			X		X	
Sample description	All	NDPs: 0 Tests: 46			X			X		X		X			X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 46			X			X		X		X			X			X		X	
Total Sulphate	All	NDPs: 0 Tests: 17			X					X								X			
Total Sulphur	All	NDPs: 0 Tests: 17			X					X								X			
TPH CWG (W)	All	NDPs: 0 Tests: 32		X			X		X					X			X				
TPH CWG GC (S)	All	NDPs: 0 Tests: 46			X			X		X		X			X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 46	X			X		X			X		X			X			X		X

18580458	3C-M2		1.00 - 1.00	250g Amber Jar (ALE210)	S				X	X		X		X	X	X				X					
				1kg TUB	S	X		X			X		X								X					
18580400	3C-M2		0.50 - 0.50	60g VOC (ALE215)	S																				X
				250g Amber Jar (ALE210)	S				X	X		X		X	X	X	X	X				X				
				1kg TUB	S	X		X			X		X								X					
18580708	3C-L2-V		1.50 - 1.50	60g VOC (ALE215)	S																				X
				250g Amber Jar (ALE210)	S				X	X		X		X	X	X						X				
18580700	3C-L2		1.00 - 1.00	60g VOC (ALE215)	S																				X
				250g Amber Jar (ALE210)	S				X	X		X		X	X	X	X	X				X				
				1kg TUB	S	X		X			X		X								X					
18580626	3C-L2		0.50 - 0.50	60g VOC (ALE215)	S																				X
				250g Amber Jar (ALE210)	S				X	X		X		X	X	X						X				
				1kg TUB	S	X		X			X		X								X					
18580736	3C-K2-V		1.20 - 1.20	60g VOC (ALE215)	S																				X
				250g Amber Jar (ALE210)	S				X	X		X		X	X	X						X				
18580725	3C-K2		1.00 - 1.00	60g VOC (ALE215)	S																				X
				250g Amber Jar (ALE210)	S				X	X		X		X	X	X						X				
				1kg TUB	S	X		X			X		X								X					
18580716	3C-K2		0.50 - 0.50	60g VOC (ALE215)	S																				X
				250g Amber Jar (ALE210)	S				X	X		X		X	X	X	X	X				X				
				1kg TUB	S	X		X			X		X								X					

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18580458		18580528
Customer Sample Reference			3C-M2		3C-M2-V
AGS Reference					
Depth (m)			1.00 - 1.00		1.40 - 1.40
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 46		X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 78		X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 46		X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 46		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 46	X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 46		X	
PAH by GCMS	All	NDPs: 0 Tests: 46		X	
pH	All	NDPs: 0 Tests: 46		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 46		X	
Sample description	All	NDPs: 0 Tests: 46		X	
Total Organic Carbon	All	NDPs: 0 Tests: 46		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 46		X	
VOC MS (S)	All	NDPs: 0 Tests: 46	X		X

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18580502	3C-B3	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18580512	3C-B3	1.00 - 1.00	Black	Loamy Sand	Stones	None
18580520	3C-B3	1.90 - 1.90	Dark Brown	Loamy Sand	Stones	Stones
18580468	3C-B4	0.70 - 0.70	Dark Brown	Loamy Sand	Stones	Vegetation
18580473	3C-B4	1.40 - 1.40	Dark Brown	Sand	Stones	None
18580537	3C-B3-V	2.40 - 2.40	Dark Brown	Sandy Clay Loam	Stones	None
18580477	3C-B4-V	2.40 - 2.40	Dark Brown	Sandy Clay Loam	Stones	Vegetation
18580548	3C-C3	0.50 - 0.50	Black	Loamy Sand	Stones	Vegetation
18580558	3C-C3	1.00 - 1.00	Black	Loamy Sand	Stones	Vegetation
18580566	3C-C3	1.50 - 1.50	Grey	Loamy Sand	Stones	Concrete/Aggregate
18580481	3C-C4	0.70 - 0.70	Dark Brown	Loamy Sand	Stones	Stones
18580488	3C-C4	1.40 - 1.40	Dark Brown	Sandy Loam	Stones	None
18580576	3C-C3-V	2.20 - 2.20	Dark Brown	Clay Loam	None	Vegetation
18580494	3C-C4-V	2.40 - 2.40	Dark Brown	Sandy Clay Loam	Stones	Stones
18580587	3C-D3	0.80 - 0.80	Dark Brown	Loamy Sand	Stones	Vegetation
18580592	3C-D3	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Stones
18580607	3C-D4	0.50 - 0.50	Dark Brown	Silty Clay Loam	Stones	Vegetation
18580618	3C-D4	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Stones
18580599	3C-D3-V	1.90 - 1.90	Dark Brown	Silty Clay Loam	None	Vegetation
18580635	3C-D4-V	2.50 - 2.50	Dark Brown	Sandy Clay Loam	Stones	Vegetation
18580674	3C-E3	0.50 - 0.50	Dark Brown	Clay Loam	Stones	Vegetation
18580683	3C-E3	1.00 - 1.00	Dark Brown	Sand	Stones	Stones
18580645	3C-E4	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	Vegetation
18580655	3C-E4	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18580692	3C-E3-V	2.70 - 2.70	Dark Brown	Clay Loam	Vegetation	None
18580665	3C-E4-V	3.00 - 3.00	Dark Brown	Silty Clay Loam	Vegetation	None
18580440	3C-H2	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Stones
18580444	3C-H2	1.00 - 1.00	Black	Loamy Sand	Stones	Vegetation
18580454	3C-H2	2.00 - 2.00	Dark Brown	Loamy Sand	Vegetation	Stones
18580462	3C-H2-V	2.30 - 2.30	Dark Brown	Sandy Clay Loam	None	None
18580419	3C-I2	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18580423	3C-I2	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18580427	3C-I2	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Stones
18580434	3C-I2-V	2.30 - 2.30	Dark Brown	Sandy Clay Loam	Stones	None
18580405	3C-J2	0.50 - 0.50	Black	Loamy Sand	Stones	Oil/Petroleum
18580410	3C-J2	1.00 - 1.00	Dark Brown	Sand	Stones	None
18580415	3C-J2-V	1.30 - 1.30	Dark Brown	Silty Clay Loam	Stones	Vegetation
18580716	3C-K2	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Stones

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

			Colour	Description	Inclusions	Inclusions 2
18580725	3C-K2	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	None
18580736	3C-K2-V	1.20 - 1.20	Dark Brown	Silty Clay Loam	None	None
18580626	3C-L2	0.50 - 0.50	Dark Brown	Silty Clay Loam	Vegetation	None
18580700	3C-L2	1.00 - 1.00	Black	Loamy Sand	Stones	N/A
18580708	3C-L2-V	1.50 - 1.50	Dark Brown	Silt Loam	Vegetation	None
18580400	3C-M2	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18580458	3C-M2	1.00 - 1.00	Black	Loamy Sand	Stones	Vegetation
18580528	3C-M2-V	1.40 - 1.40	Dark Brown	Silty Clay Loam	Vegetation	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B3	3C-B3	3C-B3	3C-B4	3C-B4	3C-B3-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90	0.70 - 0.70	1.40 - 1.40	2.40 - 2.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580502	18580512	18580520	18580468	18580473	18580537
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		19	9.3	8.3	17	8.1	23
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	265 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.194 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	0.0363 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	0.23 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.163		0.207	0.105		
Sulphate, Total potential	<0.06 %	TM132		0.489		0.621	0.315		
Soil Organic Matter (SOM)	<0.35 %	TM132		13 #	40.2 #	12.9 #	9.14 #	1.95 #	1.88 #
pH	1 pH Units	TM133		7.97 M	10.8 M	9.93 M	7.87 M	12.5 M	8.25 M
Cyanide, Total	<1 mg/kg	TM153		4.05 M	<1 M	2 M	142 @ M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	2.71 @ M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		41.1 M	23.9 M	17 M	5.97 M	<6 M	12.1 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.2 M	<0.2 M	0.766 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		61.9 M	184 M	127 M	79.8 M	366 M	32 M
Copper	<1.4 mg/kg	TM181		27.8 M	47.7 M	38.4 M	19.3 M	40.7 M	18.8 M
Iron	<1000 mg/kg	TM181		61800 #	162000 #	209000 #	46100 #	214000 #	34400 #
Lead	<0.7 mg/kg	TM181		198 M	45.3 M	25.9 M	43 M	18.6 M	19.8 M
Manganese	<0.13 mg/kg	TM181		8440 M	25600 M	10100 M	8760 M	26300 M	501 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<1.4 M	1.32 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		18.9 M	35.6 M	25.7 M	14.7 M	29.2 M	37.4 M
Selenium	<1 mg/kg	TM181		2.01 #	16.5 #	<10 #	1.37 #	14.1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		189 #	107 #	97.5 #	160 #	377 #	48.5 #
Zinc	<1.9 mg/kg	TM181		745 M	240 M	83.1 M	446 M	70.5 M	107 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.155		0.152	0.163		
Calcium	<21 mg/kg	TM224		78300		59600	148000		
Magnesium	<8 mg/kg	TM224		10400		7650	47900		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.134 M		0.0526 M	0.144 M		
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		N/C					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B4-V	3C-C3	3C-C3	3C-C3	3C-C4	3C-C4
			Depth (m)	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.70 - 0.70	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580477	18580548	18580558	18580566	18580481	18580488
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		35	18	8.2	2.4	23	7.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		234 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0122 M	0.0327 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0122 M	0.0436 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	0.0762 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.161			0.24
Sulphate, Total potential	<0.06 %	TM132				0.483			0.72
Soil Organic Matter (SOM)	<0.35 %	TM132		6.47 #	61.9 #	4.45 #	0.36 #	9.26 #	0.828 #
pH	1 pH Units	TM133		7.87 M	8.06 M	11.8 M	8.03 M	7.84 M	11.7 M
Cyanide, Total	<1 mg/kg	TM153		1.18 @ M	3.74 M	4.86 M	<1 M	5.33 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 @ M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		14.2 M	12.4 M	20.7 M	7.04 M	14.7 M	<6 M
Cadmium	<0.02 mg/kg	TM181		0.16 M	1.59 M	0.919 M	<0.2 M	1.16 M	1.25 M
Chromium	<0.9 mg/kg	TM181		37.4 M	195 M	192 M	465 M	32 M	516 M
Copper	<1.4 mg/kg	TM181		23.2 M	30.4 M	188 M	42.5 M	42.4 M	15.3 M
Iron	<1000 mg/kg	TM181		36600 #	113000 #	424000 #	190000 #	87800 #	120000 #
Lead	<0.7 mg/kg	TM181		46.7 M	182 M	<70 M	<7 M	369 M	34.6 M
Manganese	<0.13 mg/kg	TM181		792 M	13200 M	19400 M	28700 M	3320 M	58200 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		25.4 M	36 M	137 M	32.5 M	27.5 M	10.7 M
Selenium	<1 mg/kg	TM181		<1 #	<10 #	<10 #	15.3 #	1.82 #	14.6 #
Vanadium	<0.2 mg/kg	TM181		63.5 #	155 #	344 #	460 #	64.7 #	693 #
Zinc	<1.9 mg/kg	TM181		164 M	812 M	<190 M	29.2 M	2870 M	89.1 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.263			0.662
Calcium	<21 mg/kg	TM224				86600			245000
Magnesium	<8 mg/kg	TM224				4950			11400
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.0927 M			0.201 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-C3-V	3C-C4-V	3C-D3	3C-D3	3C-D4	3C-D4
			Depth (m)	2.20 - 2.20	2.40 - 2.40	0.80 - 0.80	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580576	18580494	18580587	18580592	18580607	18580618
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		22	14	6.7	2.2	23	3.1
Exchangeable Ammonia as N	<12 mg/kg	TM024		213 M	47.9 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.129 M	0.0102 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.107 M	0.0102 M	0.0129 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	0.075 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	0.311 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.0831		0.0403	
Sulphate, Total potential	<0.06 %	TM132				0.249		0.121	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.32 @ #	1.01 #	<0.35 #	5.57 #	4.9 #	3 #
pH	1 pH Units	TM133		7.82 M	8.6 M	7.98 M	12.4 M	8.38 M	11.5 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	1.99 M	1.98 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.6 M	9.1 M	21.5 M	8.76 M	11.9 M	5.3 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.2 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		34.7 M	22.4 M	91.7 M	145 M	31.9 M	352 M
Copper	<1.4 mg/kg	TM181		17.5 M	7.35 M	35.6 M	8.58 M	20.7 M	6.4 M
Iron	<1000 mg/kg	TM181		22600 #	31500 #	277000 #	118000 #	31300 #	126000 #
Lead	<0.7 mg/kg	TM181		21 M	23.5 M	13.2 M	8.27 M	35.6 M	13.9 M
Manganese	<0.13 mg/kg	TM181		405 M	1060 M	20500 M	20200 M	668 M	20500 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		36.8 M	25 M	14.1 M	7.17 M	32.3 M	3.97 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<10 #	4.72 #	<1 #	7.89 #
Vanadium	<0.2 mg/kg	TM181		53.6 #	41.1 #	163 #	192 #	53.5 #	318 #
Zinc	<1.9 mg/kg	TM181		104 M	114 M	144 M	108 M	144 M	82.9 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.445		0.0282	
Calcium	<21 mg/kg	TM224				91800		9350	
Magnesium	<8 mg/kg	TM224				7500		9760	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.0968 M		0.0515 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-D3-V	3C-D4-V	3C-E3	3C-E3	3C-E4	3C-E4
			Depth (m)	1.90 - 1.90	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580599	18580635	18580674	18580683	18580645	18580655
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		24	27	20	9.9	23	9
Exchangeable Ammonia as N	<12 mg/kg	TM024		111 M	124 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0252 M	<0.01 M	<0.01 M	0.044 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0504 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	0.0756 M	<0.035 M	<0.035 M	0.044 M
Sulphur, Total	<0.02 %	TM132					0.462	0.0826	
Sulphate, Total potential	<0.06 %	TM132					1.39	0.248	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.57 #	6.6 #	9 @#	0.688 #	2.91 @#	3.05 #
pH	1 pH Units	TM133		8.44 M	7.96 M	8.37 M	12.1 M	8.63 M	12.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	4.03 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.6 M	14.4 M	7.93 M	8.19 M	12 M	5.1 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.224 M	<0.02 M	0.583 M	0.565 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		32.8 M	31.4 M	265 M	531 M	35.4 M	381 M
Copper	<1.4 mg/kg	TM181		12.7 M	20.9 M	15.1 M	36.3 M	22.7 M	14 M
Iron	<1000 mg/kg	TM181		32600 #	22700 #	75100 #	177000 #	24700 #	126000 #
Lead	<0.7 mg/kg	TM181		20.8 M	43.7 M	22.6 M	13.9 M	47.3 M	31.2 M
Manganese	<0.13 mg/kg	TM181		1300 M	297 M	24000 M	35700 M	1380 M	47200 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		33.1 M	28.8 M	15 M	25.4 M	30.5 M	8.93 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	5.08 #	11.8 #	<1 #	13.6 #
Vanadium	<0.2 mg/kg	TM181		54.6 #	51 #	262 #	629 #	49.7 #	741 #
Zinc	<1.9 mg/kg	TM181		96.9 M	139 M	106 M	<190 M	149 M	102 M
Sulphate, acid soluble (total)	<0.02 %	TM221					0.863	0.0677	
Calcium	<21 mg/kg	TM224					225000	37000	
Magnesium	<8 mg/kg	TM224					9530	14500	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243					0.151 M	0.0368 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304					<0.001 #		
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304					<0.001 #		
Additional Asbestos Components (Using TM048)		TM304					None #		
Analysts Comments		TM304					N/C		
Asbestos Quantification - Total - %	<0.001 %	TM304					<0.001 #		

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-E3-V	3C-E4-V	3C-H2	3C-H2	3C-H2	3C-H2-V
			Depth (m)	2.70 - 2.70	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580692	18580665	18580440	18580444	18580454	18580462
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		37	30	14	14	20	28
Exchangeable Ammonia as N	<12 mg/kg	TM024		164 M	198 M	<12 M	<12 M	<12 M	104 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0116 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.0348 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	0.0464 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.199		0.127	
Sulphate, Total potential	<0.06 %	TM132				0.597		0.381	
Soil Organic Matter (SOM)	<0.35 %	TM132		5.95 @ #	4.29 #	8.45 #	90.2 #	5.86 #	2.16 #
pH	1 pH Units	TM133		7.9 M	8.03 M	8.7 M	8.24 M	7.61 M	7.72 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	8.59 M	2.85 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13.9 M	13.9 M	10.4 M	9.64 M	12.9 M	10.8 M
Cadmium	<0.02 mg/kg	TM181		0.137 M	<0.02 M	0.0482 M	<0.02 M	0.053 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		37.7 M	34.7 M	26.3 M	14.9 M	28.6 M	40 M
Copper	<1.4 mg/kg	TM181		21 M	18 M	31.7 M	37.4 M	41.9 M	26.4 M
Iron	<1000 mg/kg	TM181		27800 #	22300 #	29600 #	68300 #	22100 #	36600 #
Lead	<0.7 mg/kg	TM181		41 M	35.1 M	30.9 M	69 M	34.1 M	21.3 M
Manganese	<0.13 mg/kg	TM181		603 M	449 M	1320 M	1780 M	1210 M	416 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		27.3 M	25.8 M	20.4 M	19.2 M	26.7 M	39 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	1.1 #	2.04 #	<1 #
Vanadium	<0.2 mg/kg	TM181		64.9 #	53.6 #	52.7 #	45 #	55.7 #	58.3 #
Zinc	<1.9 mg/kg	TM181		131 M	112 M	158 M	335 M	105 M	114 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.112		0.17	
Calcium	<21 mg/kg	TM224				100000		18300	
Magnesium	<8 mg/kg	TM224				7920		3880	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.146 M		0.349 M	

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-I2	3C-I2	3C-I2	3C-I2-V	3C-J2	3C-J2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580419	18580423	18580427	18580434	18580405	18580410
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.9	23	8.6	25	21	21
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB							10.8
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB							9.06
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB							10.6
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB							8.5
Water Analytical M (ad)	<0.5 %	SUB							0.87
Water Gross M(ex)	<0.5 %	SUB							15.5
Water Total M(ar)	<0.5 %	SUB							16.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	53.7 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0126 M	0.0126 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0756 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.0882 M
Sulphur, Total	<0.02 %	TM132		0.179		0.324			0.541
Sulphate, Total potential	<0.06 %	TM132		0.537		0.972			1.62
Soil Organic Matter (SOM)	<0.35 %	TM132		6.79 #	9.76 #	31.5 #	1.81 @ #	>100 #	65.7 #
pH	1 pH Units	TM133		8.38 M	8.11 M	7.97 M	7.43 M	7.97 M	12.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	259 M	272 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	2.39 M	<20 M
Arsenic	<0.6 mg/kg	TM181		9.71 M	12.6 M	10.1 M	14.6 M	10.5 M	13.6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		24.7 M	25.8 M	5.1 M	33 M	77 M	264 M
Copper	<1.4 mg/kg	TM181		16.3 M	18 M	35.2 M	22.5 M	98.5 M	72.6 M
Iron	<1000 mg/kg	TM181		24200 #	25100 #	73700 #	33000 #	65100 #	61400 #
Lead	<0.7 mg/kg	TM181		34.8 M	27.2 M	28.1 M	18.2 M	138 M	65 M
Manganese	<0.13 mg/kg	TM181		1260 M	952 M	1870 M	577 M	1520 M	2020 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	1.4 M	1.06 M
Nickel	<0.2 mg/kg	TM181		22.5 M	23.6 M	22.7 M	31.7 M	72.1 M	125 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		45.4 #	44.8 #	63 #	57.4 #	28.7 #	43.7 #
Zinc	<1.9 mg/kg	TM181		179 M	144 M	127 M	116 M	691 M	549 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.191		0.107			0.116
Calcium	<21 mg/kg	TM224		64900		39600			36800

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-I2	3C-I2	3C-I2	3C-I2-V	3C-J2	3C-J2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580419	18580423	18580427	18580434	18580405	18580410
			AGS Reference						
Magnesium	<8 mg/kg	TM224		12700		6030			6000
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.481 M		0.291 M			0.103 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #		<0.001 #			<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #		<0.001 #			<0.001 #
Additional Asbestos Components (Using TM048)		TM304		None #		None #			None #
Analysts Comments		TM304		N/C		N/A			N/A
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #		<0.001 #			<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J2-V	3C-K2	3C-K2	3C-K2-V	3C-L2	3C-L2
			Depth (m)	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580415	18580716	18580725	18580736	18580626	18580700
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		38	4.1	15	36	22	15
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB				19.8			
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB				16.9			
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB				19.6			
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB				16.3			
Water Analytical M (ad)	<0.5 %	SUB				1.16			
Water Gross M(ex)	<0.5 %	SUB				13.9			
Water Total M(ar)	<0.5 %	SUB				14.9			
Exchangeable Ammonia as N	<12 mg/kg	TM024		181 M	<12 M	<12 M	108 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0104 M	<0.01 M	<0.01 M	<0.01 M	0.0118 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.449				0.298
Sulphate, Total potential	<0.06 %	TM132			1.35				0.894
Soil Organic Matter (SOM)	<0.35 %	TM132		7.41 #	40 #	47.6 #	5.4 #	2.84 #	86.4 #
pH	1 pH Units	TM133		6.91 M	8.15 M	8.17 M	7.64 M	8.45 M	7.84 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	19.3 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.9 M	4.51 M	12.4 M	11.4 M	12.9 M	9.29 M
Cadmium	<0.02 mg/kg	TM181		0.0489 M	<0.02 M	<0.02 M	<0.02 M	0.254 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		63.7 M	494 M	755 M	39.3 M	114 M	8.5 M
Copper	<1.4 mg/kg	TM181		30.4 M	19.4 M	66.3 M	17.7 M	14.3 M	33.5 M
Iron	<1000 mg/kg	TM181		38000 #	73600 #	36600 #	38500 #	43900 #	36900 #
Lead	<0.7 mg/kg	TM181		30.1 M	6.95 M	33.3 M	31.5 M	49.3 M	38.9 M
Manganese	<0.13 mg/kg	TM181		423 M	10400 M	1310 M	445 M	3640 M	1250 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		39 M	70.9 M	307 M	25.9 M	22.5 M	17.6 M
Selenium	<1 mg/kg	TM181		<1 #	4.08 #	<1 #	<1 #	1.97 #	<1 #
Vanadium	<0.2 mg/kg	TM181		70.2 #	173 #	48.4 #	62.7 #	109 #	28.4 #
Zinc	<1.9 mg/kg	TM181		131 M	41 M	99.4 M	113 M	190 M	158 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.0343				0.0722
Calcium	<21 mg/kg	TM224			115000				62800

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			3C-J2-V	1.30 - 1.30	Soil/Solid (S)	19/10/2018	00:00	23/10/2018	181023-12	18580415	
			3C-K2	0.50 - 0.50	Soil/Solid (S)	19/10/2018	00:00	23/10/2018	181023-12	18580716	
			3C-K2	1.00 - 1.00	Soil/Solid (S)	19/10/2018	00:00	23/10/2018	181023-12	18580725	
			3C-K2-V	1.20 - 1.20	Soil/Solid (S)	19/10/2018	00:00	23/10/2018	181023-12	18580736	
			3C-L2	0.50 - 0.50	Soil/Solid (S)	19/10/2018	00:00	23/10/2018	181023-12	18580626	
			3C-L2	1.00 - 1.00	Soil/Solid (S)	19/10/2018	00:00	23/10/2018	181023-12	18580700	
Magnesium	<8 mg/kg	TM224		11900							4540
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0302 M							0.0853 M

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-L2-V	3C-M2	3C-M2	3C-M2-V		
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018		
			SDG Ref	181023-12	181023-12	181023-12	181023-12		
			Lab Sample No.(s)	18580708	18580400	18580458	18580528		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		25	11	9.8	35		
Exchangeable Ammonia as N	<12 mg/kg	TM024		28.9 M	<12 M	<12 M	<12 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M		
Sulphur, Total	<0.02 %	TM132			0.229				
Sulphate, Total potential	<0.06 %	TM132			0.687				
Soil Organic Matter (SOM)	<0.35 %	TM132		1.6 #	6.86 @ #	25.9 #	5.72 #		
pH	1 pH Units	TM133		7.84 M	8.48 M	8.62 M	7.55 M		
Cyanide, Total	<1 mg/kg	TM153		<1 M	3.12 M	2.05 M	1.33 M		
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		12 M	13.4 M	11.7 M	16 M		
Cadmium	<0.02 mg/kg	TM181		<0.02 M	2.15 M	<0.2 M	<0.02 M		
Chromium	<0.9 mg/kg	TM181		28 M	82.8 M	<9 M	38.3 M		
Copper	<1.4 mg/kg	TM181		11.9 M	22.7 M	38.7 M	19.7 M		
Iron	<1000 mg/kg	TM181		43800 #	115000 #	268000 #	31700 #		
Lead	<0.7 mg/kg	TM181		20.2 M	69.9 M	27.7 M	39.1 M		
Manganese	<0.13 mg/kg	TM181		1260 M	11500 M	4570 M	342 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<1.4 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		30.4 M	25.2 M	45.2 M	29.5 M		
Selenium	<1 mg/kg	TM181		<1 #	<10 #	<10 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		48.1 #	124 #	125 #	65.5 #		
Zinc	<1.9 mg/kg	TM181		95.7 M	288 M	142 M	125 M		
Sulphate, acid soluble (total)	<0.02 %	TM221			0.214				
Calcium	<21 mg/kg	TM224			89800				
Magnesium	<8 mg/kg	TM224			9740				
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.146 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B3	3C-B3	3C-B3	3C-B4	3C-B4	3C-B3-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90	0.70 - 0.70	1.40 - 1.40	2.40 - 2.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580502	18580512	18580520	18580468	18580473	18580537
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.8	90.1	89.5	77.9	87.9	87.2
Acenaphthene-d10 % recovery**	%	TM218		91.8	90.9	87.3	90.4	92.2	90.7
Phenanthrene-d10 % recovery**	%	TM218		89.9	86.5	88.9	95.3	92.6	91
Chrysene-d12 % recovery**	%	TM218		87.3	74.6	85.5	76.8	86.3	84.8
Perylene-d12 % recovery**	%	TM218		84.1	73.7	75.6	71.5	76.7	76.6
Naphthalene	<0.009 mg/kg	TM218		0.689 M	1.11 M	0.537 M	0.252 M	0.0397 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.678 M	1.4 M	0.467 M	0.429 M	0.0159 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0826 M	0.0607 M	<0.008 M	0.0255 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.358 M	0.85 M	<0.01 M	0.103 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		2.73 M	8.15 M	1.94 M	0.809 M	0.357 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.989 M	2.7 M	0.9 M	0.474 M	0.0348 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		6.83 M	14.3 M	4.62 M	2.71 M	0.389 M	0.107 M
Pyrene	<0.015 mg/kg	TM218		5.04 M	10.7 M	3.56 M	2.43 M	0.258 M	0.089 M
Benz(a)anthracene	<0.014 mg/kg	TM218		3.09 M	6.19 M	2.08 M	1.44 M	0.214 M	0.039 M
Chrysene	<0.01 mg/kg	TM218		2.64 M	5.44 M	2.24 M	1.57 M	0.312 M	0.0413 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		4.52 M	8.88 M	3.21 M	2.7 M	0.258 M	0.0236 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.73 M	3.29 M	1.14 M	0.845 M	0.106 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		2.84 M	5.11 M	1.87 M	1.9 M	0.105 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		2.79 M	4.76 M	1.63 M	2.14 M	0.0819 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.609 M	1.1 M	0.3 M	0.439 M	0.0264 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.24 M	4.19 M	1.28 M	1.77 M	0.102 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		37.9	78.2	25.8	20	2.3	0.3

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B4-V	3C-C3	3C-C3	3C-C3	3C-C4	3C-C4
			Depth (m)	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.70 - 0.70	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580477	18580548	18580558	18580566	18580481	18580488
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.6	87.6	91	82.6	87.3	74.5
Acenaphthene-d10 % recovery**	%	TM218		92.9	98	89.9	83.4	93.3	82.4
Phenanthrene-d10 % recovery**	%	TM218		94.4	91.7	88.2	82.2	93.1	81.2
Chrysene-d12 % recovery**	%	TM218		90.8	78	85.1	83	91.5	70.5
Perylene-d12 % recovery**	%	TM218		83.1	81.1	89.2	78	81.6	77.8
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	3.05 M	0.206 M	0.0249 M	0.0777 M	0.0483 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	10.3 M	0.334 M	<0.012 M	0.0687 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.342 M	0.0138 M	<0.008 M	<0.008 M	0.139 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	4.06 M	0.106 M	<0.01 M	<0.01 M	0.0529 M
Phenanthrene	<0.015 mg/kg	TM218		0.0676 M	32.9 M	0.982 M	0.0811 M	0.164 M	0.732 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	12.7 M	0.33 M	<0.016 M	0.042 M	0.152 M
Fluoranthene	<0.017 mg/kg	TM218		0.24 M	99 M	3.07 M	0.287 M	0.398 M	2.7 M
Pyrene	<0.015 mg/kg	TM218		0.171 M	72.8 M	2.35 M	0.21 M	0.297 M	2.97 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0775 M	43.6 M	1.35 M	0.136 M	0.271 M	2.74 M
Chrysene	<0.01 mg/kg	TM218		0.101 M	42.3 M	1.12 M	0.586 M	0.223 M	2.9 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.076 M	64.1 M	2.36 M	0.955 M	0.444 M	4.71 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0264 M	21.8 M	0.797 M	0.333 M	0.115 M	2.03 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0444 M	36.8 M	1.43 M	0.0763 M	0.237 M	4.71 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0334 M	33.1 M	1.6 M	0.25 M	0.232 M	3.81 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	6.97 M	0.243 M	0.11 M	0.0401 M	0.643 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	29.9 M	1.11 M	0.56 M	0.239 M	3.64 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.837	514	17.4	3.61	2.85	32

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-C3-V	3C-C4-V	3C-D3	3C-D3	3C-D4	3C-D4
			Depth (m)	2.20 - 2.20	2.40 - 2.40	0.80 - 0.80	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580576	18580494	18580587	18580592	18580607	18580618
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		82.4	80.7	88.5	89.6	82.6	84.4
Acenaphthene-d10 % recovery**	%	TM218		93.6	82.2	88.7	95.1	83.5	83.6
Phenanthrene-d10 % recovery**	%	TM218		97.7	84.9	88	95.4	91.4	84.6
Chrysene-d12 % recovery**	%	TM218		80.3	84	83.7	103	94.7	87.9
Perylene-d12 % recovery**	%	TM218		74.8	80.6	79.9	90.6	85.1	78.3
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	0.192 M	0.625 M	<0.009 M	0.201 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0179 M	<0.06 M	0.066 M	<0.012 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	0.0899 M	0.131 M	<0.008 M	0.0809 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.05 M	<0.05 M	<0.01 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	0.0333 M	0.934 M	1.62 M	<0.015 M	1.29 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.181 M	0.288 M	<0.016 M	0.265 M
Fluoranthene	<0.017 mg/kg	TM218		0.0357 M	0.186 M	2.99 M	3.63 M	0.0341 M	3.24 M
Pyrene	<0.015 mg/kg	TM218		0.0298 M	0.146 M	3.37 M	3.75 M	0.0289 M	3.73 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0278 M	0.111 M	2.22 M	2.62 M	0.0212 M	2.11 M
Chrysene	<0.01 mg/kg	TM218		0.0229 M	0.123 M	2.5 M	3.45 M	0.023 M	2.19 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0334 M	0.167 M	3.27 M	5 M	0.0279 M	3.19 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.0817 M	1.7 M	1.87 M	<0.014 M	1.19 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.022 M	0.12 M	3.09 M	2.92 M	0.0194 M	2.05 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.0654 M	2.57 M	2.26 M	<0.018 M	1.09 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	0.421 M	0.386 M	<0.023 M	0.315 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.084 M	2.7 M	2.42 M	<0.024 M	1.38 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.172	1.13	26.2	31	0.155	22.3

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-D3-V	3C-D4-V	3C-E3	3C-E3	3C-E4	3C-E4
			Depth (m)	1.90 - 1.90	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580599	18580635	18580674	18580683	18580645	18580655
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.1	84.6	80.1	83	79.5	80.4
Acenaphthene-d10 % recovery**	%	TM218		88.6	91.7	88.9	86.7	80.3	80.7
Phenanthrene-d10 % recovery**	%	TM218		90.3	92.9	94.1	88.4	83	89.5
Chrysene-d12 % recovery**	%	TM218		85.9	87	88.7	82.3	78.5	92.3
Perylene-d12 % recovery**	%	TM218		90.9	77.7	76.4	84.4	76.1	85.4
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.0502 M	0.568 M	<0.009 M	<0.009 M	0.0796 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	0.184 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	0.0776 M	<0.008 M	<0.008 M	0.0821 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.204 M	<0.01 M	<0.01 M	0.029 M
Phenanthrene	<0.015 mg/kg	TM218		0.0211 M	0.0945 M	1.43 M	0.0369 M	0.0316 M	2.02 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.55 M	<0.016 M	<0.016 M	0.206 M
Fluoranthene	<0.017 mg/kg	TM218		0.0537 M	0.266 M	1.78 M	0.0935 M	0.0881 M	3.99 M
Pyrene	<0.015 mg/kg	TM218		0.0435 M	0.211 M	1.4 M	0.0762 M	0.0709 M	3.3 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0205 M	0.125 M	0.949 M	0.0556 M	0.0539 M	1.9 M
Chrysene	<0.01 mg/kg	TM218		0.0241 M	0.175 M	1.1 M	0.143 M	0.0646 M	2.58 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0222 M	0.111 M	1.29 M	0.125 M	0.0974 M	3.88 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.0335 M	0.479 M	0.0414 M	0.0364 M	1.52 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0201 M	0.0617 M	0.817 M	0.0283 M	0.053 M	2.1 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.0429 M	0.6 M	0.0274 M	0.035 M	1.36 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	0.119 M	<0.023 M	<0.023 M	0.342 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.0498 M	0.572 M	0.0949 M	0.0472 M	1.71 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.205	1.22	12.1	0.722	0.578	25.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-E3-V	3C-E4-V	3C-H2	3C-H2	3C-H2	3C-H2-V
			Depth (m)	2.70 - 2.70	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580692	18580665	18580440	18580444	18580454	18580462
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		79.7	92.7	90.1	92.4	89.4	94.9
Acenaphthene-d10 % recovery**	%	TM218		85	86.3	95.3	100	91.8	98.4
Phenanthrene-d10 % recovery**	%	TM218		89	95.1	96.4	96.6	94.5	0
Chrysene-d12 % recovery**	%	TM218		99.8	100	96.8	89.8	98.3	107
Perylene-d12 % recovery**	%	TM218		96.9	101	91.7	89.4	91.1	102
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	0.561 M	1.32 M	5.1 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	0.364 M	1.95 M	7.41 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	0.0466 M	0.227 M	0.431 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.298 M	2.97 M	6.43 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	6.64 M	22.1 M	50.8 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	1.3 M	4.35 M	12.6 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.0511 M	<0.017 M	14.4 M	30.9 M	93.1 M	0.0244 M
Pyrene	<0.015 mg/kg	TM218		0.0441 M	<0.015 M	10.6 M	22.2 M	66.7 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	6.34 M	8.84 M	31.3 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0305 M	<0.01 M	6.64 M	7.73 M	27.5 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0409 M	<0.015 M	8.7 M	10.9 M	38 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	2.87 M	4.24 M	12.5 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	5.15 M	8.04 M	28 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	3.92 M	7.06 M	22.5 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	0.793 M	0.993 M	4.3 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	3.66 M	5.64 M	19 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.167	<0.118	72.2	139	426	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-I2	3C-I2	3C-I2	3C-I2-V	3C-J2	3C-J2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580419	18580423	18580427	18580434	18580405	18580410
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.9	87	90.7	75.6	78.9	93
Acenaphthene-d10 % recovery**	%	TM218		95.1	92	93.3	79.1	86.6	182
Phenanthrene-d10 % recovery**	%	TM218		99.2	93.5	97.2	77.8	84.5	111
Chrysene-d12 % recovery**	%	TM218		105	96.2	101	69.1	75.7	267
Perylene-d12 % recovery**	%	TM218		101	84.7	95.2	70.6	77.3	183
Naphthalene	<0.009 mg/kg	TM218		0.105 M	0.0669 M	1.09 M	<0.009 M	17.3 M	16.8 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0516 M	0.0379 M	0.0835 M	<0.012 M	24.4 M	21.6 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	<0.008 M	1.36 M	1.47 M
Fluorene	<0.01 mg/kg	TM218		0.0341 M	0.0337 M	<0.01 M	<0.01 M	30.9 M	21.2 M
Phenanthrene	<0.015 mg/kg	TM218		0.279 M	0.316 M	4.96 M	0.0578 M	195 M	215 M
Anthracene	<0.016 mg/kg	TM218		0.0877 M	0.0763 M	0.373 M	<0.016 M	101 M	103 M
Fluoranthene	<0.017 mg/kg	TM218		0.513 M	0.555 M	7.45 M	0.0874 M	294 M	391 M
Pyrene	<0.015 mg/kg	TM218		0.414 M	0.423 M	4.48 M	0.0569 M	216 M	278 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.272 M	0.295 M	2.64 M	0.0334 M	117 M	154 M
Chrysene	<0.01 mg/kg	TM218		0.273 M	0.32 M	2.83 M	0.0295 M	113 M	165 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.445 M	0.411 M	5.75 M	0.0378 M	132 M	170 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.159 M	0.132 M	2 M	<0.014 M	45 M	66.3 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.259 M	0.208 M	2.36 M	<0.015 M	93.6 M	117 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.242 M	0.16 M	2.85 M	<0.018 M	79.3 M	85.4 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0505 M	0.0367 M	0.729 M	<0.023 M	16.8 M	16.3 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.195 M	0.163 M	2.18 M	<0.024 M	63.6 M	89.2 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.38	3.23	39.8	0.303	1540	1910

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J2-V	3C-K2	3C-K2	3C-K2-V	3C-L2	3C-L2
			Depth (m)	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580415	18580716	18580725	18580736	18580626	18580700
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		79.6	89.1	91.3	87.4	92	80.9
Acenaphthene-d10 % recovery**	%	TM218		85.5	93.4	90	90.1	94.2	88.8
Phenanthrene-d10 % recovery**	%	TM218		88.1	99.6	88.6	93.2	96.7	89.6
Chrysene-d12 % recovery**	%	TM218		77.7	98.2	83.8	88	103	88.6
Perylene-d12 % recovery**	%	TM218		78.9	84.8	82.8	80.3	100	90.3
Naphthalene	<0.009 mg/kg	TM218		0.347 M	1.25 M	1.43 M	<0.009 M	<0.009 M	5.66 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	1.62 M	4.6 M	<0.012 M	<0.012 M	13.1 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	0.264 M	<0.008 M	<0.008 M	0.721 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	1.9 M	1.88 M	<0.01 M	<0.01 M	16 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	18.6 M	20.1 M	0.0517 M	0.0218 M	156 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	5.93 M	8.24 M	<0.016 M	<0.016 M	58 M
Fluoranthene	<0.017 mg/kg	TM218		0.0355 M	34.3 M	60.6 M	0.176 M	0.049 M	287 M
Pyrene	<0.015 mg/kg	TM218		0.0295 M	26.1 M	41.5 M	0.138 M	0.044 M	226 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	18.9 M	30 M	0.0802 M	0.028 M	96.5 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	15.7 M	23.6 M	0.0901 M	0.0265 M	80.7 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	14.2 M	37.7 M	0.0963 M	0.0582 M	117 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	7.79 M	15.5 M	0.0307 M	0.019 M	39.1 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	14.1 M	21.8 M	0.0579 M	0.0327 M	86 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	10 M	19.2 M	0.0345 M	0.0314 M	74.9 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	3.19 M	4.99 M	<0.023 M	<0.023 M	13.8 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	9.19 M	15.4 M	0.0478 M	<0.024 M	75.7 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.412	183	307	0.802	0.311	1350

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-L2-V	3C-M2	3C-M2	3C-M2-V		
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018		
			SDG Ref	181023-12	181023-12	181023-12	181023-12		
			Lab Sample No.(s)	18580708	18580400	18580458	18580528		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.9	83.5	79.8	91.3		
Acenaphthene-d10 % recovery**	%	TM218		87.7	89	88.5	94.2		
Phenanthrene-d10 % recovery**	%	TM218		91.3	96.8	94.2	97.7		
Chrysene-d12 % recovery**	%	TM218		85.8	110	84.8	107		
Perylene-d12 % recovery**	%	TM218		87.4	96.7	86.5	104		
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.983 M	2.84 M	<0.009 M		
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	2.23 M	7.12 M	<0.012 M		
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0781 M	0.66 M	<0.008 M		
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.904 M	7.17 M	<0.01 M		
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	9.72 M	75 M	0.0309 M		
Anthracene	<0.016 mg/kg	TM218		<0.016 M	5.6 M	39.1 M	<0.016 M		
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	39.7 M	105 M	0.0732 M		
Pyrene	<0.015 mg/kg	TM218		<0.015 M	32 M	82.1 M	0.0549 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	17.4 M	44.8 M	0.033 M		
Chrysene	<0.01 mg/kg	TM218		<0.01 M	17.7 M	42.7 M	0.0341 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	20.2 M	50.9 M	0.0491 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	9 M	19.2 M	<0.014 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	14.8 M	26.9 M	0.0324 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	11.8 M	26.2 M	0.0294 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	2.82 M	8.84 M	<0.023 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	12 M	27.8 M	<0.024 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	197	567	0.337		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B3	3C-B3	3C-B3	3C-B4	3C-B4	3C-B3-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90	0.70 - 0.70	1.40 - 1.40	2.40 - 2.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580502	18580512	18580520	18580468	18580473	18580537
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		79 @	49 @	54 @	76.4	88 @	104 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	0.284 @ #	<0.2 @ #	<0.2 M	<0.2 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	0.0341 @	0.0305 @	<0.02	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	0.0737 @	0.0502 @	<0.02	<0.02 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	0.044 @	0.0295 @	<0.02	<0.02 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	0.0539 @	<0.02 @	<0.02	<0.02 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.97	7.12	1.7	2.29	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		10.4	24.3	5.31	8.32	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		58.9	128	28.1	37.7	2.4	1.8
Aliphatics >C35-C44	<0.1 mg/kg	TM173		20.9	17.7	3.78	9.83	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		93.2	177	38.9	58.2	2.4	1.8
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	0.0286 @	<0.02 @	<0.02	<0.02 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	0.0352 @	<0.02 @	<0.02	<0.02 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		5.23	5.47	1.31	3.3	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		31.4	30.4	7	18.5	2.07	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		116	101	21.9	98.6	8.39	1.54
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		40.5	23.4	4.67	31.6	6.95	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		13.4	6.04	1.42	9.87	3.29	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		193	160	34.9	152	17.4	1.54
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		286	337	73.9	210	19.8	3.33

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B4-V	3C-C3	3C-C3	3C-C3	3C-C4	3C-C4
			Depth (m)	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.70 - 0.70	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580477	18580548	18580558	18580566	18580481	18580488
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		115 @	90 @	108	98.8 @	109	95 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.347 @ M	<0.2 @ M	<0.2 M	<0.2 @ M	<0.2 M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0231 @	<0.02 @	<0.02	<0.02 @	<0.02	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0631 @	<0.02 @	<0.02	<0.02 @	<0.02	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0724 @	<0.02 @	<0.02	<0.02 @	<0.02	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0816 @	<0.02 @	<0.02	<0.02 @	<0.02	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	3.7	0.305	<0.1	<0.1	3.96
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	24.2	1.07	<0.1	1.53	10.5
Aliphatics >C21-C35	<0.1 mg/kg	TM173		4.63	88.6	6.77	59.6	23.3	52.9
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	33.9	1.78	50.3	5.73	11.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		4.63	150	9.92	110	30.5	78.4
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02	<0.02 @	<0.02	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02	<0.02 @	<0.02	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0493 @	<0.02 @	<0.02	<0.02 @	<0.02	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0539 @	<0.02 @	<0.02	<0.02 @	<0.02	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	29.5	1.5	<0.1	0.15	1.14
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		2.17	371	14.8	0.637	2.33	13.8
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		20.7	1010	51.7	15.4	24.2	136
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		4.01	263	15.1	9.4	4.11	45.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		1.24	66.2	6.83	3.47	<0.1	16.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		26.9	1680	83.1	25.5	30.8	196
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		31.8	1830	93	135	61.3	275

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-C3-V	3C-C4-V	3C-D3	3C-D3	3C-D4	3C-D4
			Depth (m)	2.20 - 2.20	2.40 - 2.40	0.80 - 0.80	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580576	18580494	18580587	18580592	18580607	18580618
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		100 @	105 @	81 @	76.3 @	71 @	87 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 @ M	<0.2 @ M	0.751 @ M	0.253 @ M	<0.2 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	0.0407 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	0.14 @	0.043 @	0.0219 @	0.0217 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	0.162 @	0.0368 @	<0.02 @	0.0206 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	0.176 @	0.0808 @	<0.02 @	0.0733 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	5.24	22.2	<0.1	5.18
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1	14.1	16.5	<0.1	9.21
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	<0.1	98.4	77.2	4.95	142
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	119	90.4	<0.1	201
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	<0.1	237	206	4.95	357
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	0.108 @	0.0246 @	<0.02 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	0.117 @	0.0542 @	<0.02 @	0.0485 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	2.6	6.73	<0.1	2.48
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	<0.1	17	16.7	<0.1	18.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		1.89	3.64	120	102	8.55	173
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	110	91.3	1.38	172
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	47.1	38.3	<0.1	77.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		1.89	3.64	249	217	9.93	366
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1.89	3.64	487	423	14.9	723

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-D3-V	3C-D4-V	3C-E3	3C-E3	3C-E4	3C-E4
			Depth (m)	1.90 - 1.90	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580599	18580635	18580674	18580683	18580645	18580655
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		100 @	113 @	86.3 @	92 @	85.5 @	104 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0214 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0655 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0567 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0353 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	0.167	1.89	<0.1	<0.1	2.63
Aliphatics >C16-C21	<0.1 mg/kg	TM173		0.688	0.604	21.4	<0.1	<0.1	9.69
Aliphatics >C21-C35	<0.1 mg/kg	TM173		0.901	3.77	39.1	<0.1	3.53	76.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	8.97	<0.1	<0.1	25.3
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		1.59	4.54	71.4	<0.1	3.53	114
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0378 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0239 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	4.17	<0.1	<0.1	2.03
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	<0.1	24.1	<0.1	1.63	21.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		1.7	12	81.4	<0.1	14.8	127
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	1.63	27.4	<0.1	5.06	51.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	9.53	<0.1	1.88	19.5
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		1.7	13.6	137	<0.1	21.5	202
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		3.29	18.1	209	<0.1	25.1	316

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-E3-V	3C-E4-V	3C-H2	3C-H2	3C-H2	3C-H2-V
			Depth (m)	2.70 - 2.70	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580692	18580665	18580440	18580444	18580454	18580462
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		104 @	96 @	107 @	72.2 @	104 @	151 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 @ M	<0.2 @ M	8.5 @ M	<0.2 @ M	<0.1 @ #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	0.0232 @	<0.02 @	<0.01 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	0.126 @	0.0223 @	<0.01 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	0.288 @	<0.02 @	<0.01 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	4.68 @	0.0211 @	<0.01 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	2.38	31.1	2.51	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1	10.5	123	48.6	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		6.67	1.62	41.8	194	36.2	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	13.2	53.3	6.75	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		6.67	1.62	67.9	401	94.1	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	0.0255 @	<0.02 @	<0.01 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	0.0499 @	<0.02 @	<0.01 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	0.191 @	<0.02 @	<0.01 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	3.12 @	<0.02 @	<0.01 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	10.8	356	32.2	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	<0.1	145	3100	343	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		21.9	12.9	371	3690	570	1.97
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		3.29	0.369	91.4	688	126	0.128
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	23.3	159	31.1	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		25.2	13.2	619	7830	1070	2.09
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		31.9	14.9	686	8240	1160	2.09

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-I2	3C-I2	3C-I2	3C-I2-V	3C-J2	3C-J2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580419	18580423	18580427	18580434	18580405	18580410
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		95.9 @	71 @	74.2 @	104 @	48 @	124 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.1 @ M	<0.2 @ #	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.01 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	0.0219 @	<0.02 @	<0.01 @	0.0365 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.01 @	0.0277 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.01 @	0.0718 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	1.05	1.06	<0.1	56.1	14.9
Aliphatics >C16-C21	<0.1 mg/kg	TM173		3.09	5.11	3.52	<0.1	258	175
Aliphatics >C21-C35	<0.1 mg/kg	TM173		26	35.1	16.7	<0.1	316	357
Aliphatics >C35-C44	<0.1 mg/kg	TM173		7.67	8.58	2.23	<0.1	91.7	130
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		36.7	49.9	23.5	<0.1	722	677
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.01 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.01 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.01 @	<0.02 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.01 @	0.0479 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	2.92	<0.1	635	105
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		2.81	5.95	32.5	<0.1	3540	1210
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		34.2	50.2	116	4.17	4460	2350
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		8.71	4.9	30.9	0.982	926	538
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.04	<0.1	7.04	<0.1	220	162
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		45.7	61.1	183	5.16	9560	4200
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		82.4	111	206	5.16	10300	4870

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J2-V	3C-K2	3C-K2	3C-K2-V	3C-L2	3C-L2
			Depth (m)	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580415	18580716	18580725	18580736	18580626	18580700
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		98 @	90 @	77 @	99 @	99.3	46 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 @ M	0.268 @ M	<0.2 @ M	<0.1 M	<0.2 @ #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.01	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0667 @	<0.02 @	<0.01	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.062 @	<0.02 @	<0.01	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0421 @	<0.02 @	<0.01	0.0201 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	8.18	7.02	<0.1	<0.1	8.74
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	41.2	27.3	<0.1	<0.1	69.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	70.5	38.8	2.61	7.18	124
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	16.3	4.24	<0.1	<0.1	30.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	136	77.4	2.61	7.18	233
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.01	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.01	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.041 @	<0.02 @	<0.01	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0281 @	<0.02 @	<0.01	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	18.5	16.3	<0.1	<0.1	58.6
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	175	163	<0.1	<0.1	966
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		12.1	489	545	18.6	15.9	1880
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		2.14	107	126	1.85	1.59	379
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	28.4	38.1	<0.1	<0.1	97.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		14.2	790	850	20.5	17.5	3280
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		14.2	926	927	23.1	24.7	3520

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-L2-V	3C-M2	3C-M2	3C-M2-V		
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018		
			SDG Ref	181023-12	181023-12	181023-12	181023-12		
			Lab Sample No.(s)	18580708	18580400	18580458	18580528		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		107	43 @	88 @	78.1		
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.2 @ #	0.302 @ M	<0.1 M		
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.02 @	0.0222 @	<0.01		
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.02 @	0.0855 @	<0.01		
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.02 @	0.0588 @	<0.01		
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.02 @	0.04 @	<0.01		
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	2.89	2.93	<0.1		
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	14.3	25.6	<0.1		
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	54.6	33.2	4.1		
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	15.8	8.15	<0.1		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	87.6	69.9	4.1		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.02 @	<0.02 @	<0.01		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.02 @	0.0233 @	<0.01		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.02 @	0.0389 @	<0.01		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.02 @	0.0266 @	<0.01		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	8.34	9.29	<0.1		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	113	140	1.17		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		<0.1	345	377	10.5		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	97.5	109	1.55		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	33	35.4	0.292		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		<0.1	564	635	13.3		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		<0.1	651	706	17.4		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B3	3C-B3	3C-B3	3C-B4	3C-B4	3C-B3-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90	0.70 - 0.70	1.40 - 1.40	2.40 - 2.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580502	18580512	18580520	18580468	18580473	18580537
			AGS Reference						
Dibromofluoromethane**	%	TM116		97.9	101 @	108	102	80	107
Toluene-d8**	%	TM116		89.4	89.6 @	96.5	95.2	99.9	99.5
4-Bromofluorobenzene**	%	TM116		73.1	70.4 @	76.8	87.7	95	94.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.2 @ M	<0.2 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.18 @ M	<0.18 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.14 @ M	<0.14 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.08 @ M	<0.08 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.2 @ #	<0.2 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.2 @ M	<0.2 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 @ M	0.469 @ M	0.309 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.8 @	<0.8	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B4-V	3C-C3	3C-C3	3C-C3	3C-C4	3C-C4
			Depth (m)	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.70 - 0.70	1.40 - 1.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580477	18580548	18580558	18580566	18580481	18580488
			AGS Reference						
Dibromofluoromethane**	%	TM116		108	95.4	103	109	115	112
Toluene-d8**	%	TM116		97.8	85.9	99	98.4	96.8	102
4-Bromofluorobenzene**	%	TM116		91.4	70.1	91.7	97.8	87.2	102
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.446 @ M	<0.13 M	<0.13 @ M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-C3-V	3C-C4-V	3C-D3	3C-D3	3C-D4	3C-D4
			Depth (m)	2.20 - 2.20	2.40 - 2.40	0.80 - 0.80	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580576	18580494	18580587	18580592	18580607	18580618
			AGS Reference						
Dibromofluoromethane**	%	TM116		102	107	103	112	111	109
Toluene-d8**	%	TM116		96.1	99.9	94.2	95.7	100	93.5
4-Bromofluorobenzene**	%	TM116		76.4	97.1	81.9	83.4	95	86.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-D3-V	3C-D4-V	3C-E3	3C-E3	3C-E4	3C-E4
			Depth (m)	1.90 - 1.90	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580599	18580635	18580674	18580683	18580645	18580655
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	118	103	113	107	116
Toluene-d8**	%	TM116		99.3	99.6	96.9	99.9	95.6	101
4-Bromofluorobenzene**	%	TM116		96.9	102	79.9	98.8	80.5	98.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	0.147 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	0.173 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-E3-V	3C-E4-V	3C-H2	3C-H2	3C-H2	3C-H2-V
			Depth (m)	2.70 - 2.70	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.30 - 2.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580692	18580665	18580440	18580444	18580454	18580462
			AGS Reference						
Dibromofluoromethane**	%	TM116		112	109	108	116	122	110
Toluene-d8**	%	TM116		97.8	97.4	96.8	92.8	96.1	98.8
4-Bromofluorobenzene**	%	TM116		94.9	94.8	81.9	82.2	74.6	96.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	0.136 M	0.2 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	32.2 @ M	0.793 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-I2	3C-I2	3C-I2	3C-I2-V	3C-J2	3C-J2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580419	18580423	18580427	18580434	18580405	18580410
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	110	111	109	113	104
Toluene-d8**	%	TM116		98.1	92.2	93.9	101	90.5	88.1
4-Bromofluorobenzene**	%	TM116		83.5	79.8	72.2	90.3	74.2	71.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	0.152 M	<0.13 M	1.3 @ M	<0.13 @ M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J2-V	3C-K2	3C-K2	3C-K2-V	3C-L2	3C-L2
			Depth (m)	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	1.20 - 1.20	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018	19/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-12	181023-12	181023-12	181023-12	181023-12	181023-12
			Lab Sample No.(s)	18580415	18580716	18580725	18580736	18580626	18580700
			AGS Reference						
Dibromofluoromethane**	%	TM116		113	97.2 @	92.2 @	106	125	99.5
Toluene-d8**	%	TM116		101	92.8 @	91.3 @	105	104	97.3
4-Bromofluorobenzene**	%	TM116		100	77.2 @	86.9 @	110	86.8	71.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.2 @ M	<0.2 @ M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.18 @ M	<0.18 @ M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.14 @ M	<0.14 @ M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.08 @ M	<0.08 @ M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.2 @ #	<0.2 @ #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.2 @ M	<0.2 @ M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.26 @ M	<0.26 @ M	<0.13 M	<0.13 M	1.78 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.8 @	<0.8 @	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-L2-V	3C-M2	3C-M2	3C-M2-V		
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	19/10/2018	19/10/2018	19/10/2018	19/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018		
			SDG Ref	181023-12	181023-12	181023-12	181023-12		
			Lab Sample No.(s)	18580708	18580400	18580458	18580528		
			AGS Reference						
Dibromofluoromethane**	%	TM116		125	107	104	133		
Toluene-d8**	%	TM116		103	99.9	97.1	104		
4-Bromofluorobenzene**	%	TM116		87.5	71	70.6	87.1		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M		
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M		
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M		
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #		
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.154 M	0.257 M	<0.13 M		
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4		

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-B3 0.50 - 0.50 SOLID 19/10/2018 00:00:00 23/10/2018 20:45:23 181023-12 18580502 TM048	05/11/2018	Lucy Caroe	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-B3 1.90 - 1.90 SOLID 19/10/2018 00:00:00 23/10/2018 19:03:58 181023-12 18580520 TM048	05/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-B4 0.70 - 0.70 SOLID 19/10/2018 00:00:00 23/10/2018 12:27:18 181023-12 18580468 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-C3 1.00 - 1.00 SOLID 19/10/2018 00:00:00 23/10/2018 14:20:22 181023-12 18580558 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-C4 1.40 - 1.40 SOLID 19/10/2018 00:00:00 23/10/2018 12:55:56 181023-12 18580488 TM048	05/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-D3 0.80 - 0.80 SOLID 19/10/2018 00:00:00 23/10/2018 16:33:26 181023-12 18580587 TM048	05/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181023-12 **Client Reference:** **Report Number:** 480979
Location: Llanwern **Order Number:** LLA493 **Superseded Report:** 480401

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-D4 0.50 - 0.50 SOLID 19/10/2018 00:00:00 23/10/2018 14:26:49 181023-12 18580607 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-E3 1.00 - 1.00 SOLID 19/10/2018 00:00:00 23/10/2018 20:47:47 181023-12 18580683 TM048	05/11/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-E4 0.50 - 0.50 SOLID 19/10/2018 00:00:00 23/10/2018 17:20:16 181023-12 18580645 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-H2 0.50 - 0.50 SOLID 19/10/2018 00:00:00 23/10/2018 19:36:39 181023-12 18580440 TM048	05/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-H2 2.00 - 2.00 SOLID 19/10/2018 00:00:00 23/10/2018 19:38:46 181023-12 18580454 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I2 0.50 - 0.50 SOLID 19/10/2018 00:00:00 23/10/2018 20:53:17 181023-12 18580419 TM048	05/11/2018	Lucy Caroe	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181023-12 **Client Reference:** **Report Number:** 480979
Location: Llanwern **Order Number:** LLA493 **Superseded Report:** 480401

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I2 2.00 - 2.00 SOLID 19/10/2018 00:00:00 23/10/2018 19:41:04 181023-12 18580427 TM048	05/11/2018	James Richards	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-J2 1.00 - 1.00 SOLID 19/10/2018 00:00:00 23/10/2018 19:22:15 181023-12 18580410 TM048	05/11/2018	Andrzej Ferfecki	loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-K2 0.50 - 0.50 SOLID 19/10/2018 00:00:00 23/10/2018 14:31:47 181023-12 18580716 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-L2 1.00 - 1.00 SOLID 19/10/2018 00:00:00 23/10/2018 21:16:31 181023-12 18580700 TM048	05/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-M2 0.50 - 0.50 SOLID 19/10/2018 00:00:00 23/10/2018 21:14:50 181023-12 18580400 TM048	05/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-B3 0.50 - 0.50 SOLID 19/10/2018 00:00:00 23/10/2018 20:45:54 181023-12 18580502 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-E3 1.00 - 1.00 SOLID 19/10/2018 00:00:00 23/10/2018 20:48:17 181023-12 18580683 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I2 0.50 - 0.50 SOLID 19/10/2018 00:00:00 23/10/2018 20:53:54 181023-12 18580419 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I2 2.00 - 2.00 SOLID 19/10/2018 00:00:00 23/10/2018 19:40:34 181023-12 18580427 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-J2 1.00 - 1.00 SOLID 19/10/2018 00:00:00 23/10/2018 19:21:34 181023-12 18580410 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580400
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-M2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00504	<0.0005	0.0504	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00674	<0.0003	0.0674	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00302	<0.003	0.0302	<0.03	-	-	-
Nickel	0.00196	<0.0004	0.0196	<0.004	-	-	-
Selenium	0.00212	<0.001	0.0212	<0.01	-	-	-
Vanadium	0.00794	<0.001	0.0794	<0.01	-	-	-
Zinc	0.0736	<0.001	0.736	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.353	<0.019	3.53	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	0.000368	<0.00025	0.00368	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	0.000371	<0.00025	0.00371	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	8.34
Conductivity (µS/cm)	269.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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11:13:58 14/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580400
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-M2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	8.34
Conductivity (µS/cm)	269.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580405
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-J2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000906	<0.0005	0.00906	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0077	<0.001	0.077	<0.01	-	-	-
Copper	0.00181	<0.0003	0.0181	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00338	<0.0004	0.0338	<0.004	-	-	-
Selenium	0.00101	<0.001	0.0101	<0.01	-	-	-
Vanadium	0.00104	<0.001	0.0104	<0.01	-	-	-
Zinc	0.00217	<0.001	0.0217	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.23	<0.019	2.3	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000303	<0.00001	0.000303	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Fluoranthene by GCMS	0.000218	<0.000005	0.00218	<0.00005	-	-	-
Anthracene by GCMS	0.0000324	<0.000005	0.000324	<0.00005	-	-	-
Phenanthrene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Fluorene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Chrysene by GCMS	0.0000856	<0.000005	0.000856	<0.00005	-	-	-
Pyrene by GCMS	0.000148	<0.000005	0.00148	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000512	<0.000005	0.000512	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000129	<0.000005	0.00129	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000524	<0.000005	0.000524	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000075	<0.000002	0.00075	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000606	<0.000005	0.000606	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000452	<0.000005	0.000452	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00108	<0.000082	0.0108	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	8.13
Conductivity (µS/cm)	141.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580405
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-J2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	8.13
Conductivity (µS/cm)	141.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

14/11/2018 11:15:16

11:13:58 14/11/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580410
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-J2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.62	<0.05	6.2	<0.5	-	-	-
Arsenic	0.000601	<0.0005	0.00601	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00438	<0.001	0.0438	<0.01	-	-	-
Copper	0.00255	<0.0003	0.0255	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00253	<0.0004	0.0253	<0.004	-	-	-
Selenium	0.00116	<0.001	0.0116	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00276	<0.001	0.0276	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.212	<0.019	2.12	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000063	<0.00001	0.00063	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000948	<0.000005	0.0000948	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00013	<0.000005	0.0013	<0.00005	-	-	-
Fluoranthene by GCMS	0.00162	<0.000005	0.0162	<0.00005	-	-	-
Anthracene by GCMS	0.000107	<0.000005	0.00107	<0.00005	-	-	-
Phenanthrene by GCMS	0.000209	<0.000005	0.00209	<0.00005	-	-	-
Fluorene by GCMS	0.0000269	<0.000005	0.000269	<0.00005	-	-	-
Chrysene by GCMS	0.000514	<0.000005	0.00514	<0.00005	-	-	-
Pyrene by GCMS	0.00105	<0.000005	0.0105	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000436	<0.000005	0.00436	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000789	<0.000005	0.00789	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000361	<0.000005	0.00361	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000482	<0.000002	0.00482	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000851	<0.000005	0.000851	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000614	<0.000005	0.00614	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000452	<0.000005	0.00452	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00695	<0.000082	0.0695	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	7.98
Conductivity (µS/cm)	177.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580410
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-J2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	7.98
Conductivity (µS/cm)	177.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580419
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-I2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00442	<0.0005	0.0442	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00527	<0.0003	0.0527	<0.003	-	-	-
Lead	0.000244	<0.0002	0.00244	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00111	<0.0004	0.0111	<0.004	-	-	-
Selenium	0.00117	<0.001	0.0117	<0.01	-	-	-
Vanadium	0.00865	<0.001	0.0865	<0.01	-	-	-
Zinc	0.00432	<0.001	0.0432	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.299	<0.019	2.99	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000225	<0.00001	0.000225	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000818	<0.000005	0.0000818	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000353	<0.000005	0.000353	<0.00005	-	-	-
Anthracene by GCMS	0.00000859	<0.000005	0.0000859	<0.00005	-	-	-
Phenanthrene by GCMS	0.000032	<0.000005	0.00032	<0.00005	-	-	-
Fluorene by GCMS	0.00000758	<0.000005	0.0000758	<0.00005	-	-	-
Chrysene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Pyrene by GCMS	0.0000251	<0.000005	0.000251	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000713	<0.000005	0.0000713	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000202	<0.000005	0.000202	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000978	<0.000002	0.0000978	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000199	<0.000005	0.000199	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000076	<0.000005	0.000076	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00023	<0.000082	0.0023	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.78
Conductivity (µS/cm)	160.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580419
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-I2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.78
Conductivity (µS/cm)	160.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580423
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-I2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00109	<0.0004	0.0109	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0141	<0.001	0.141	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.32
Conductivity (µS/cm)	362.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580423
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-I2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.32
Conductivity (µS/cm)	362.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

14/11/2018 11:15:16

11:13:58 14/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580427
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-I2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00114	<0.0005	0.0114	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00292	<0.0003	0.0292	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000736	<0.0004	0.00736	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0023	<0.001	0.023	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.27	<0.019	2.7	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000148	<0.00001	0.00148	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Fluoranthene by GCMS	0.000142	<0.000005	0.00142	<0.00005	-	-	-
Anthracene by GCMS	0.0000131	<0.000005	0.000131	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000935	<0.000005	0.000935	<0.00005	-	-	-
Fluorene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Chrysene by GCMS	0.0000656	<0.000005	0.000656	<0.00005	-	-	-
Pyrene by GCMS	0.0000881	<0.000005	0.000881	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000397	<0.000005	0.000397	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000434	<0.000005	0.000434	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000347	<0.000002	0.000347	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000911	<0.000005	0.000911	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000427	<0.000005	0.000427	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000962	<0.000082	0.00962	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.95
Conductivity (µS/cm)	193.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580427
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-I2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.95
Conductivity (µS/cm)	193.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580440
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-H2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00508	<0.0005	0.0508	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00517	<0.0003	0.0517	<0.003	-	-	-
Lead	0.000352	<0.0002	0.00352	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00142	<0.0004	0.0142	<0.004	-	-	-
Selenium	0.00138	<0.001	0.0138	<0.01	-	-	-
Vanadium	0.0109	<0.001	0.109	<0.01	-	-	-
Zinc	0.00154	<0.001	0.0154	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0802	<0.019	0.802	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000619	<0.00001	0.000619	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000286	<0.000005	0.000286	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000623	<0.000005	0.000623	<0.00005	-	-	-
Anthracene by GCMS	0.0000159	<0.000005	0.000159	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000763	<0.000005	0.000763	<0.00005	-	-	-
Fluorene by GCMS	0.0000202	<0.000005	0.000202	<0.00005	-	-	-
Chrysene by GCMS	0.0000329	<0.000005	0.000329	<0.00005	-	-	-
Pyrene by GCMS	0.0000387	<0.000005	0.000387	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000335	<0.000005	0.000335	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000258	<0.000005	0.000258	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000105	<0.000002	0.000105	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000439	<0.000082	0.00439	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.28
Conductivity (µS/cm)	137.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580440
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-H2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.28
Conductivity (µS/cm)	137.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580444
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-H2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.423	<0.2	4.23	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00201	<0.0005	0.0201	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00466	<0.0003	0.0466	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000605	<0.0004	0.00605	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00341	<0.001	0.0341	<0.01	-	-	-
Zinc	0.00129	<0.001	0.0129	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000306	<0.0001	0.00306	<0.001	-	-	-
Acenaphthene by GCMS	0.00828	<0.00005	0.0828	<0.0005	-	-	-
Acenaphthylene by GCMS	0.0554	<0.00005	0.554	<0.0005	-	-	-
Fluoranthene by GCMS	0.0336	<0.00005	0.336	<0.0005	-	-	-
Anthracene by GCMS	0.0139	<0.00005	0.139	<0.0005	-	-	-
Phenanthrene by GCMS	0.104	<0.00005	1.04	<0.0005	-	-	-
Fluorene by GCMS	0.076	<0.00005	0.76	<0.0005	-	-	-
Chrysene by GCMS	0.00194	<0.00005	0.0194	<0.0005	-	-	-
Pyrene by GCMS	0.0206	<0.00005	0.206	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.00227	<0.00005	0.0227	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00227	<0.00005	0.0227	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000936	<0.00005	0.00936	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.0014	<0.00002	0.014	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000183	<0.00005	0.00183	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000885	<0.00005	0.00885	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000974	<0.00005	0.00974	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.323	<0.00082	3.23	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.091	<0.05	0.91	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.14
Conductivity (µS/cm)	153.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580444
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-H2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.039	<0.01	0.39	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.026	<0.01	0.26	<0.1	-	-	-
Aromatics >EC12-EC16	0.154	<0.01	1.54	<0.1	-	-	-
Aromatics >EC16-EC21	0.165	<0.01	1.65	<0.1	-	-	-
Aromatics >EC21-EC35	0.029	<0.01	0.29	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.348	<0.01	3.48	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.439	<0.01	4.39	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.14
Conductivity (µS/cm)	153.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580454
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-H2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00491	<0.0005	0.0491	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00238	<0.0003	0.0238	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000709	<0.0004	0.00709	<0.004	-	-	-
Selenium	0.00254	<0.001	0.0254	<0.01	-	-	-
Vanadium	0.0139	<0.001	0.139	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.207	<0.019	2.07	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000443	<0.00001	0.000443	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000302	<0.000005	0.000302	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000169	<0.000005	0.00169	<0.00005	-	-	-
Fluoranthene by GCMS	0.00238	<0.000005	0.0238	<0.00005	-	-	-
Anthracene by GCMS	0.00012	<0.000005	0.0012	<0.00005	-	-	-
Phenanthrene by GCMS	0.000345	<0.000005	0.00345	<0.00005	-	-	-
Fluorene by GCMS	0.0000429	<0.000005	0.000429	<0.00005	-	-	-
Chrysene by GCMS	0.000683	<0.000005	0.00683	<0.00005	-	-	-
Pyrene by GCMS	0.00136	<0.000005	0.0136	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000501	<0.000005	0.00501	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000722	<0.000005	0.00722	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000304	<0.000005	0.00304	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000411	<0.000002	0.00411	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000763	<0.000005	0.000763	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000534	<0.000005	0.00534	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000334	<0.000005	0.00334	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00805	<0.000082	0.0805	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.61
Conductivity (µS/cm)	146.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580454
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-H2
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.61
Conductivity (µS/cm)	146.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.2
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580458
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-M2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0073	<0.0005	0.073	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00347	<0.0003	0.0347	<0.003	-	-	-
Lead	0.000332	<0.0002	0.00332	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000782	<0.0004	0.00782	<0.004	-	-	-
Selenium	0.00127	<0.001	0.0127	<0.01	-	-	-
Vanadium	0.0278	<0.001	0.278	<0.01	-	-	-
Zinc	0.00198	<0.001	0.0198	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.422	<0.019	4.22	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000528	<0.0005	0.00528	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	0.0013	<0.00025	0.013	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	0.000502	<0.00025	0.00502	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	0.000455	<0.00025	0.00455	<0.0025	-	-	-
Pyrene by GCMS	0.00099	<0.00025	0.0099	<0.0025	-	-	-
Benz(a)anthracene by GCMS	0.000976	<0.00025	0.00976	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	0.000693	<0.00025	0.00693	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	0.00038	<0.00025	0.0038	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	0.000362	<0.0001	0.00362	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	0.000667	<0.00025	0.00667	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	0.000385	<0.00025	0.00385	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	0.00723	<0.0041	0.0723	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	7.84
Conductivity (µS/cm)	111.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.2
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580458
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-M2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	7.84
Conductivity (µS/cm)	111.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580468
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-B4
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.924	<0.2	9.24	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.14	<0.05	1.4	<0.5	-	-	-
Arsenic	0.0017	<0.0005	0.017	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00693	<0.0003	0.0693	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.356	<0.003	3.56	<0.03	-	-	-
Nickel	0.00191	<0.0004	0.0191	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00733	<0.001	0.0733	<0.01	-	-	-
Zinc	0.00893	<0.001	0.0893	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.676	<0.019	6.76	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000269	<0.00001	0.000269	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000181	<0.000005	0.000181	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000486	<0.000005	0.000486	<0.00005	-	-	-
Anthracene by GCMS	0.00000998	<0.000005	0.0000998	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000283	<0.000005	0.000283	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000335	<0.000005	0.000335	<0.00005	-	-	-
Pyrene by GCMS	0.000049	<0.000005	0.00049	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000247	<0.000005	0.000247	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000509	<0.000005	0.000509	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000277	<0.000005	0.000277	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000315	<0.000002	0.000315	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000952	<0.000005	0.0000952	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000916	<0.000005	0.000916	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000439	<0.000005	0.000439	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000494	<0.000082	0.00494	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.03
Conductivity (µS/cm)	328.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580468
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-B4
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.03
Conductivity (µS/cm)	328.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580473
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-B4
Depth (m)	1.40 - 1.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.316	<0.2	3.16	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00232	<0.001	0.0232	<0.01	-	-	-
Copper	0.0162	<0.0003	0.162	<0.003	-	-	-
Lead	0.000622	<0.0002	0.00622	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000759	<0.0004	0.00759	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00145	<0.001	0.0145	<0.01	-	-	-
Zinc	0.00278	<0.001	0.0278	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000522	<0.00001	0.000522	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000449	<0.000005	0.000449	<0.00005	-	-	-
Anthracene by GCMS	0.00000826	<0.000005	0.0000826	<0.00005	-	-	-
Phenanthrene by GCMS	0.00012	<0.000005	0.0012	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000313	<0.000005	0.000313	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000257	<0.000082	0.00257	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	2.53
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580473
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-B4
Depth (m)	1.40 - 1.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	2.53
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580481
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-C4
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.336	<0.2	3.36	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000622	<0.0005	0.00622	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0101	<0.0003	0.101	<0.003	-	-	-
Lead	0.000285	<0.0002	0.00285	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00207	<0.0004	0.0207	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00132	<0.001	0.0132	<0.01	-	-	-
Zinc	0.00765	<0.001	0.0765	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0386	<0.019	0.386	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Anthracene by GCMS	0.00000595	<0.000005	0.0000595	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000243	<0.000005	0.000243	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000135	<0.000005	0.000135	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.14
Conductivity (µS/cm)	238.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580481
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-C4
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.14
Conductivity (µS/cm)	238.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580488
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-C4
Depth (m)	1.40 - 1.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000131	<0.00001	0.000131	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00106	<0.0005	0.0106	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0076	<0.001	0.076	<0.01	-	-	-
Copper	0.0253	<0.0003	0.253	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00207	<0.0004	0.0207	<0.004	-	-	-
Selenium	0.00136	<0.001	0.0136	<0.01	-	-	-
Vanadium	0.0644	<0.001	0.644	<0.01	-	-	-
Zinc	0.00106	<0.001	0.0106	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.10
Conductivity (µS/cm)	599.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580488
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-C4
Depth (m)	1.40 - 1.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.10
Conductivity (µS/cm)	599.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580502
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-B3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.253	<0.2	2.53	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0033	<0.0005	0.033	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00746	<0.0003	0.0746	<0.003	-	-	-
Lead	0.00044	<0.0002	0.0044	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00102	<0.0004	0.0102	<0.004	-	-	-
Selenium	0.0014	<0.001	0.014	<0.01	-	-	-
Vanadium	0.00731	<0.001	0.0731	<0.01	-	-	-
Zinc	0.014	<0.001	0.14	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.506	<0.019	5.06	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	7.90
Conductivity (µS/cm)	197.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580502
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-B3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.016	<0.01	0.16	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	7.90
Conductivity (µS/cm)	197.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580512
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-B3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00565	<0.0005	0.0565	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0013	<0.001	0.013	<0.01	-	-	-
Copper	0.00228	<0.0003	0.0228	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000435	<0.0004	0.00435	<0.004	-	-	-
Selenium	0.00233	<0.001	0.0233	<0.01	-	-	-
Vanadium	0.108	<0.001	1.08	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.251	<0.019	2.51	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.74
Conductivity (µS/cm)	207.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580512
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-B3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.74
Conductivity (µS/cm)	207.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580520
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-B3
Depth (m)	1.90 - 1.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.06	<0.05	0.6	<0.5	-	-	-
Arsenic	0.00298	<0.0005	0.0298	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0011	<0.001	0.011	<0.01	-	-	-
Copper	0.000661	<0.0003	0.00661	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00188	<0.001	0.0188	<0.01	-	-	-
Vanadium	0.0725	<0.001	0.725	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.308	<0.019	3.08	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000087	<0.000005	0.000087	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000465	<0.000005	0.000465	<0.00005	-	-	-
Anthracene by GCMS	0.00000796	<0.000005	0.0000796	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000314	<0.000005	0.000314	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000284	<0.000005	0.000284	<0.00005	-	-	-
Pyrene by GCMS	0.0000356	<0.000005	0.000356	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000253	<0.000005	0.000253	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000307	<0.000005	0.000307	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000162	<0.000005	0.000162	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000158	<0.000002	0.000158	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000319	<0.000005	0.000319	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000295	<0.000082	0.00295	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.83
Conductivity (µS/cm)	196.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580520
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-B3
Depth (m)	1.90 - 1.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.83
Conductivity (µS/cm)	196.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580548
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-C3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.26	<0.2	2.6	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00107	<0.0005	0.0107	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00112	<0.001	0.0112	<0.01	-	-	-
Copper	0.00741	<0.0003	0.0741	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00382	<0.003	0.0382	<0.03	-	-	-
Nickel	0.00129	<0.0004	0.0129	<0.004	-	-	-
Selenium	0.00143	<0.001	0.0143	<0.01	-	-	-
Vanadium	0.00934	<0.001	0.0934	<0.01	-	-	-
Zinc	0.00122	<0.001	0.0122	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0231	<0.019	0.231	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	0.000681	<0.00025	0.00681	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	0.000351	<0.00025	0.00351	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	0.000547	<0.00025	0.00547	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	0.000489	<0.00025	0.00489	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	0.000313	<0.0001	0.00313	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	6.75
Conductivity (µS/cm)	251.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580548
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-C3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	6.75
Conductivity (µS/cm)	251.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580558
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-C3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.201	<0.2	2.01	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00942	<0.001	0.0942	<0.01	-	-	-
Copper	0.0343	<0.0003	0.343	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00114	<0.0004	0.0114	<0.004	-	-	-
Selenium	0.00101	<0.001	0.0101	<0.01	-	-	-
Vanadium	0.0128	<0.001	0.128	<0.01	-	-	-
Zinc	0.00133	<0.001	0.0133	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000374	<0.0001	0.00374	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000137	<0.00005	0.00137	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000128	<0.00005	0.00128	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000113	<0.00005	0.00113	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	1,110.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580558
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-C3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.015	<0.01	0.15	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.50
Conductivity (µS/cm)	1,110.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.6
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580566
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-C3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.261	<0.2	2.61	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.014	<0.001	0.14	<0.01	-	-	-
Copper	0.00952	<0.0003	0.0952	<0.003	-	-	-
Lead	0.00319	<0.0002	0.0319	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000505	<0.0004	0.00505	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0038	<0.001	0.038	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	0.000297	<0.00025	0.00297	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	0.000301	<0.00025	0.00301	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	3,520.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.6
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580566
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-C3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	3,520.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580587
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-D3
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.594	<0.2	5.94	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00262	<0.0005	0.0262	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00121	<0.001	0.0121	<0.01	-	-	-
Copper	0.00265	<0.0003	0.0265	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000704	<0.0004	0.00704	<0.004	-	-	-
Selenium	0.00203	<0.001	0.0203	<0.01	-	-	-
Vanadium	0.0629	<0.001	0.629	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.224	<0.019	2.24	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.31
Conductivity (µS/cm)	427.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580587
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-D3
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.31
Conductivity (µS/cm)	427.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.8
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580592
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-D3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.000016	<0.00001	0.00016	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00573	<0.001	0.0573	<0.01	-	-	-
Copper	0.00546	<0.0003	0.0546	<0.003	-	-	-
Lead	0.000296	<0.0002	0.00296	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000631	<0.0004	0.00631	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00416	<0.001	0.0416	<0.01	-	-	-
Zinc	0.00285	<0.001	0.0285	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000562	<0.0005	0.00562	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	0.000779	<0.00025	0.00779	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	0.00165	<0.00025	0.0165	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	0.000726	<0.00025	0.00726	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	12.03
Conductivity (µS/cm)	1,690.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.8
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580592
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-D3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	12.03
Conductivity (µS/cm)	1,690.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580607
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-D4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000646	<0.0005	0.00646	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00441	<0.0003	0.0441	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00131	<0.0004	0.0131	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0023	<0.001	0.023	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.33
Conductivity (µS/cm)	145.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580607
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-D4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.33
Conductivity (µS/cm)	145.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.9
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580618
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-D4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000136	<0.00001	0.000136	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00158	<0.001	0.0158	<0.01	-	-	-
Copper	0.00347	<0.0003	0.0347	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000672	<0.0004	0.00672	<0.004	-	-	-
Selenium	0.00142	<0.001	0.0142	<0.01	-	-	-
Vanadium	0.0436	<0.001	0.436	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000482	<0.00001	0.000482	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000895	<0.000005	0.000895	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00059	<0.000005	0.0059	<0.00005	-	-	-
Anthracene by GCMS	0.0000678	<0.000005	0.000678	<0.00005	-	-	-
Phenanthrene by GCMS	0.000488	<0.000005	0.00488	<0.00005	-	-	-
Fluorene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Chrysene by GCMS	0.0000437	<0.000005	0.000437	<0.00005	-	-	-
Pyrene by GCMS	0.000556	<0.000005	0.00556	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000484	<0.000005	0.000484	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000133	<0.000005	0.000133	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000647	<0.000005	0.0000647	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000648	<0.000002	0.0000648	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00197	<0.000082	0.0197	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.44
Conductivity (µS/cm)	559.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.9
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580618
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-D4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.44
Conductivity (µS/cm)	559.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

14/11/2018 11:15:16

11:13:58 14/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.115	**Natural Moisture Content (%)**	28.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	78
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580626
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-L2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.242	<0.2	2.42	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00443	<0.0005	0.0443	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00449	<0.0003	0.0449	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00075	<0.0004	0.0075	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00857	<0.001	0.0857	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.86
Conductivity (µS/cm)	183.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.875

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.115	**Natural Moisture Content (%)**	28.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	78
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580626
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-L2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.86
Conductivity (µS/cm)	183.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.875

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580645
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-E4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00183	<0.0005	0.0183	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00445	<0.0003	0.0445	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00116	<0.0004	0.0116	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00146	<0.001	0.0146	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.227	<0.019	2.27	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	7.81
Conductivity (µS/cm)	167.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.117	**Natural Moisture Content (%)**	29.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	77
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580645
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-E4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	7.81
Conductivity (µS/cm)	167.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.873

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580655
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-E4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00609	<0.001	0.0609	<0.01	-	-	-
Copper	0.0272	<0.0003	0.272	<0.003	-	-	-
Lead	0.00149	<0.0002	0.0149	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00229	<0.0004	0.0229	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00709	<0.001	0.0709	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000144	<0.00001	0.00144	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000578	<0.000005	0.000578	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00246	<0.000005	0.0246	<0.00005	-	-	-
Anthracene by GCMS	0.000113	<0.000005	0.00113	<0.00005	-	-	-
Phenanthrene by GCMS	0.00535	<0.000005	0.0535	<0.00005	-	-	-
Fluorene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Chrysene by GCMS	0.00014	<0.000005	0.0014	<0.00005	-	-	-
Pyrene by GCMS	0.00149	<0.000005	0.0149	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000085	<0.000005	0.00085	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000466	<0.000005	0.000466	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000201	<0.000005	0.000201	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000094	<0.000002	0.000094	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00994	<0.000082	0.0994	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.96
Conductivity (µS/cm)	4.20
Temperature (°C)	18.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580655
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-E4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.96
Conductivity (µS/cm)	4.20
Temperature (°C)	18.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580674
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-E3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0059	<0.0005	0.059	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00677	<0.0003	0.0677	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00318	<0.003	0.0318	<0.03	-	-	-
Nickel	0.00176	<0.0004	0.0176	<0.004	-	-	-
Selenium	0.00127	<0.001	0.0127	<0.01	-	-	-
Vanadium	0.0262	<0.001	0.262	<0.01	-	-	-
Zinc	0.00204	<0.001	0.0204	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.449	<0.019	4.49	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000637	<0.000005	0.000637	<0.00005	-	-	-
Anthracene by GCMS	0.0000172	<0.000005	0.000172	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000483	<0.000005	0.000483	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000552	<0.000005	0.000552	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000399	<0.000005	0.000399	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000157	<0.000005	0.000157	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000231	<0.000002	0.000231	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000949	<0.000005	0.0000949	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000102	<0.000005	0.000102	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000283	<0.000082	0.00283	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	8.03
Conductivity (µS/cm)	257.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580674
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-E3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	8.03
Conductivity (µS/cm)	257.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580683
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-E3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.283	<0.2	2.83	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0101	<0.001	0.101	<0.01	-	-	-
Copper	0.00313	<0.0003	0.0313	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00392	<0.001	0.0392	<0.01	-	-	-
Zinc	0.00331	<0.001	0.0331	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	11.98
Conductivity (µS/cm)	1,570.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580683
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-E3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	11.98
Conductivity (µS/cm)	1,570.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

14/11/2018 11:15:16

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580700
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-L2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00322	<0.0005	0.0322	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00189	<0.0003	0.0189	<0.003	-	-	-
Lead	0.000242	<0.0002	0.00242	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000646	<0.0004	0.00646	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00595	<0.001	0.0595	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.426	<0.019	4.26	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	0.00327	<0.00025	0.0327	<0.0025	-	-	-
Anthracene by GCMS	0.0003	<0.00025	0.003	<0.0025	-	-	-
Phenanthrene by GCMS	0.000678	<0.00025	0.00678	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	0.00127	<0.00025	0.0127	<0.0025	-	-	-
Pyrene by GCMS	0.00238	<0.00025	0.0238	<0.0025	-	-	-
Benz(a)anthracene by GCMS	0.00129	<0.00025	0.0129	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	0.00165	<0.00025	0.0165	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	0.000853	<0.00025	0.00853	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	0.00101	<0.0001	0.0101	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000282	<0.00025	0.00282	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	0.0022	<0.00025	0.022	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	0.000965	<0.00025	0.00965	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	0.0161	<0.0041	0.161	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.13
Conductivity (µS/cm)	122.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580700
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-L2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.13
Conductivity (µS/cm)	122.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.28
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.9
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580716
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-K2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00147	<0.0005	0.0147	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0155	<0.001	0.155	<0.01	-	-	-
Copper	0.00161	<0.0003	0.0161	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00233	<0.0004	0.0233	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00283	<0.001	0.0283	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	0.000251	<0.00025	0.00251	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	9.08
Conductivity (µS/cm)	84.20
Temperature (°C)	18.90
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.28
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.9
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580716
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-K2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	9.08
Conductivity (µS/cm)	84.20
Temperature (°C)	18.90
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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580725
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-K2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00194	<0.0005	0.0194	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0135	<0.001	0.135	<0.01	-	-	-
Copper	0.00127	<0.0003	0.0127	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000928	<0.0004	0.00928	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0077	<0.001	0.077	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.23	<0.019	2.3	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	0.00111	<0.00025	0.0111	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	0.00083	<0.00025	0.0083	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	0.000489	<0.00025	0.00489	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	0.000569	<0.00025	0.00569	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	0.000427	<0.00025	0.00427	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	0.00037	<0.00025	0.0037	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	0.000232	<0.0001	0.00232	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.75
Conductivity (µS/cm)	77.90
Temperature (°C)	19.00
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

14/11/2018 11:15:16

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CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181023-12
Lab Sample Number(s)	18580725
Sampled Date	19-Oct-2018
Customer Sample Ref.	3C-K2
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.75
Conductivity (µS/cm)	77.90
Temperature (°C)	19.00
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Test Completion Dates

Lab Sample No(s)	18580502	18580512	18580520	18580468	18580473	18580537	18580477	18580548	18580558	18580566
Customer Sample Ref.	3C-B3	3C-B3	3C-B3	3C-B4	3C-B4	3C-B3-V	3C-B4-V	3C-C3	3C-C3	3C-C3
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90	0.70 - 0.70	1.40 - 1.40	2.40 - 2.40	2.40 - 2.40	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	25-Oct-2018		27-Oct-2018	06-Nov-2018					31-Oct-2018	
Ammoniacal Nitrogen	01-Nov-2018	01-Nov-2018	31-Oct-2018	01-Nov-2018	01-Nov-2018			01-Nov-2018	01-Nov-2018	01-Nov-2018
Ammonium Soil by Titration	02-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018
Anions by Kone (soil)	26-Oct-2018		26-Oct-2018	30-Oct-2018					30-Oct-2018	
Asbestos ID in Solid Samples	05-Nov-2018		05-Nov-2018	05-Nov-2018					05-Nov-2018	
Asbestos Quantification - Full	06-Nov-2018									
CEN 10:1 Leachate (1 Stage)	01-Nov-2018	27-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018			27-Oct-2018	02-Nov-2018	24-Oct-2018
CEN Readings	02-Nov-2018	31-Oct-2018	27-Oct-2018	02-Nov-2018	02-Nov-2018			31-Oct-2018	03-Nov-2018	31-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	12-Nov-2018	07-Nov-2018	30-Oct-2018	12-Nov-2018	02-Nov-2018	02-Nov-2018	12-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018
Dissolved Metals by ICP-MS	02-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018			02-Nov-2018	06-Nov-2018	06-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	02-Nov-2018	05-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018			02-Nov-2018	06-Nov-2018	02-Nov-2018
EPH CWG (Aliphatic) GC (S)	30-Oct-2018	30-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	02-Nov-2018	05-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018			02-Nov-2018	06-Nov-2018	02-Nov-2018
EPH CWG (Aromatic) GC (S)	30-Oct-2018	30-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018
GRO by GC-FID (S)	04-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	02-Nov-2018	05-Nov-2018
GRO by GC-FID (W)	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018			01-Nov-2018	01-Nov-2018	01-Nov-2018
Mercury Dissolved	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018			05-Nov-2018	05-Nov-2018	05-Nov-2018
Metals in solid samples by OES	25-Oct-2018	30-Oct-2018	26-Oct-2018	31-Oct-2018	06-Nov-2018	30-Oct-2018	06-Nov-2018	29-Oct-2018	31-Oct-2018	30-Oct-2018
PAH by GCMS	02-Nov-2018	02-Nov-2018	29-Oct-2018	31-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018
PAH Spec MS - Aqueous (W)	02-Nov-2018	05-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018			02-Nov-2018	06-Nov-2018	02-Nov-2018
pH	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018
pH Value	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018			02-Nov-2018	02-Nov-2018	02-Nov-2018
Phenols by HPLC (S)	05-Nov-2018	02-Nov-2018	29-Oct-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	06-Nov-2018	06-Nov-2018	06-Nov-2018	31-Oct-2018	06-Nov-2018	31-Oct-2018	06-Nov-2018	31-Oct-2018	06-Nov-2018	06-Nov-2018
Total Sulphate	30-Oct-2018		30-Oct-2018	30-Oct-2018					30-Oct-2018	
Total Sulphur	24-Oct-2018		25-Oct-2018	26-Oct-2018					01-Nov-2018	
TPH CWG (W)	02-Nov-2018	05-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018			02-Nov-2018	06-Nov-2018	02-Nov-2018
TPH CWG GC (S)	04-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	02-Nov-2018	05-Nov-2018
VOC MS (S)	06-Nov-2018	06-Nov-2018	04-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	06-Nov-2018	04-Nov-2018	05-Nov-2018

Lab Sample No(s)	18580481	18580488	18580576	18580494	18580587	18580592	18580607	18580618	18580599	18580635
Customer Sample Ref.	3C-C4	3C-C4	3C-C3-V	3C-C4-V	3C-D3	3C-D3	3C-D4	3C-D4	3C-D3-V	3C-D4-V
AGS Ref.										
Depth	0.70 - 0.70	1.40 - 1.40	2.20 - 2.20	2.40 - 2.40	0.80 - 0.80	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90	2.50 - 2.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		07-Nov-2018			27-Oct-2018		26-Oct-2018			
Ammoniacal Nitrogen	01-Nov-2018	01-Nov-2018			01-Nov-2018	01-Nov-2018	01-Nov-2018	31-Oct-2018		
Ammonium Soil by Titration	06-Nov-2018	02-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018
Anions by Kone (soil)		30-Oct-2018			26-Oct-2018		26-Oct-2018			
Asbestos ID in Solid Samples		05-Nov-2018			05-Nov-2018		05-Nov-2018			
CEN 10:1 Leachate (1 Stage)	25-Oct-2018	25-Oct-2018			02-Nov-2018	24-Oct-2018	24-Oct-2018	25-Oct-2018		
CEN Readings	27-Oct-2018	31-Oct-2018			03-Nov-2018	31-Oct-2018	02-Nov-2018	27-Oct-2018		
Cyanide Comp/Free/Total/Thiocyanate	30-Oct-2018	06-Nov-2018	07-Nov-2018	30-Oct-2018	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	07-Nov-2018
Dissolved Metals by ICP-MS	06-Nov-2018	06-Nov-2018			06-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018		
EPH CWG (Aliphatic) Aqueous GC (W)	31-Oct-2018	02-Nov-2018			06-Nov-2018	02-Nov-2018	02-Nov-2018	31-Oct-2018		
EPH CWG (Aliphatic) GC (S)	29-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	29-Oct-2018	26-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	31-Oct-2018	02-Nov-2018			06-Nov-2018	02-Nov-2018	02-Nov-2018	31-Oct-2018		
EPH CWG (Aromatic) GC (S)	29-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	29-Oct-2018	26-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018
GRO by GC-FID (S)	02-Nov-2018	04-Nov-2018	04-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
GRO by GC-FID (W)	01-Nov-2018	01-Nov-2018			01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018		
Mercury Dissolved	05-Nov-2018	06-Nov-2018			05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018		
Metals in solid samples by OES	29-Oct-2018	01-Nov-2018	30-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018
PAH by GCMS	29-Oct-2018	24-Oct-2018	31-Oct-2018	30-Oct-2018	25-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	25-Oct-2018	29-Oct-2018
PAH Spec MS - Aqueous (W)	31-Oct-2018	02-Nov-2018			06-Nov-2018	02-Nov-2018	02-Nov-2018	31-Oct-2018		
pH	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018
pH Value	05-Nov-2018	02-Nov-2018			02-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018		
Phenols by HPLC (S)	29-Oct-2018	02-Nov-2018	05-Nov-2018	29-Oct-2018	05-Nov-2018	29-Oct-2018	05-Nov-2018	29-Oct-2018	05-Nov-2018	29-Oct-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	06-Nov-2018	31-Oct-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	31-Oct-2018	25-Oct-2018
Total Sulphate		30-Oct-2018			26-Oct-2018		26-Oct-2018			
Total Sulphur		26-Oct-2018			25-Oct-2018		25-Oct-2018			
TPH CWG (W)	01-Nov-2018	02-Nov-2018			06-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018		
TPH CWG GC (S)	02-Nov-2018	04-Nov-2018	04-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
VOC MS (S)	02-Nov-2018	03-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	03-Nov-2018	01-Nov-2018	01-Nov-2018	03-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Lab Sample No(s)	18580674	18580683	18580645	18580655	18580692	18580665	18580440	18580444	18580454	18580462
Customer Sample Ref.	3C-E3	3C-E3	3C-E4	3C-E4	3C-E3-V	3C-E4-V	3C-H2	3C-H2	3C-H2	3C-H2-V
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	2.70 - 2.70	3.00 - 3.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.30 - 2.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		31-Oct-2018	31-Oct-2018				27-Oct-2018		27-Oct-2018	
Ammoniacal Nitrogen	31-Oct-2018	01-Nov-2018	31-Oct-2018	31-Oct-2018			31-Oct-2018	31-Oct-2018	31-Oct-2018	
Ammonium Soil by Titration	05-Nov-2018	05-Nov-2018	02-Nov-2018	06-Nov-2018	05-Nov-2018	06-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
Anions by Kone (soil)		30-Oct-2018	30-Oct-2018				26-Oct-2018		26-Oct-2018	
Asbestos ID in Solid Samples		05-Nov-2018	05-Nov-2018				05-Nov-2018		05-Nov-2018	
Asbestos Quantification - Full		06-Nov-2018								
CEN 10:1 Leachate (1 Stage)	26-Oct-2018	27-Oct-2018	26-Oct-2018	25-Oct-2018			24-Oct-2018	02-Nov-2018	24-Oct-2018	
CEN Readings	02-Nov-2018	31-Oct-2018	02-Nov-2018	27-Oct-2018			27-Oct-2018	03-Nov-2018	27-Oct-2018	
Cyanide Comp/Free/Total/Thiocyanate	07-Nov-2018	12-Nov-2018	12-Nov-2018	06-Nov-2018	12-Nov-2018	06-Nov-2018	30-Oct-2018	12-Nov-2018	29-Oct-2018	06-Nov-2018
Dissolved Metals by ICP-MS	02-Nov-2018	02-Nov-2018	06-Nov-2018	02-Nov-2018			06-Nov-2018	06-Nov-2018	06-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	01-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018			31-Oct-2018	06-Nov-2018	31-Oct-2018	
EPH CWG (Aliphatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	01-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018			31-Oct-2018	06-Nov-2018	31-Oct-2018	
EPH CWG (Aromatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018
GRO by GC-FID (S)	05-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018
GRO by GC-FID (W)	01-Nov-2018	01-Nov-2018	01-Nov-2018	30-Oct-2018			01-Nov-2018	01-Nov-2018	01-Nov-2018	
Mercury Dissolved	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018			05-Nov-2018	05-Nov-2018	05-Nov-2018	
Metals in solid samples by OES	30-Oct-2018	31-Oct-2018	30-Oct-2018	02-Nov-2018	30-Oct-2018	29-Oct-2018	26-Oct-2018	29-Oct-2018	26-Oct-2018	06-Nov-2018
PAH by GCMS	29-Oct-2018	25-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018
PAH Spec MS - Aqueous (W)	30-Oct-2018	02-Nov-2018	30-Oct-2018	30-Oct-2018			31-Oct-2018	06-Nov-2018	31-Oct-2018	
pH	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018
pH Value	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018			05-Nov-2018	02-Nov-2018	05-Nov-2018	
Phenols by HPLC (S)	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	29-Oct-2018	02-Nov-2018	29-Oct-2018	29-Oct-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	02-Nov-2018	06-Nov-2018	02-Nov-2018	31-Oct-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	08-Nov-2018	06-Nov-2018	07-Nov-2018
Total Sulphate		30-Oct-2018	30-Oct-2018				30-Oct-2018		30-Oct-2018	
Total Sulphur		26-Oct-2018	01-Nov-2018				25-Oct-2018		25-Oct-2018	
TPH CWG (W)	01-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018			01-Nov-2018	06-Nov-2018	01-Nov-2018	
TPH CWG GC (S)	05-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018
VOC MS (S)	02-Nov-2018	03-Nov-2018	02-Nov-2018	03-Nov-2018	03-Nov-2018	01-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018	03-Nov-2018

Lab Sample No(s)	18580419	18580423	18580427	18580434	18580405	18580410	18580415	18580716	18580725	18580736
Customer Sample Ref.	3C-I2	3C-I2	3C-I2	3C-I2-V	3C-J2	3C-J2	3C-J2-V	3C-K2	3C-K2	3C-K2-V
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.30 - 2.30	0.50 - 0.50	1.00 - 1.00	1.30 - 1.30	0.50 - 0.50	1.00 - 1.00	1.20 - 1.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	27-Oct-2018		27-Oct-2018			31-Oct-2018		27-Oct-2018		
Ammoniacal Nitrogen	31-Oct-2018	31-Oct-2018	31-Oct-2018		31-Oct-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018	
Ammonium Soil by Titration	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	05-Nov-2018	06-Nov-2018	02-Nov-2018	06-Nov-2018	05-Nov-2018	06-Nov-2018
Anions by Kone (soil)	26-Oct-2018		26-Oct-2018			30-Oct-2018		26-Oct-2018		
Asbestos ID in Solid Samples	05-Nov-2018		05-Nov-2018			05-Nov-2018		05-Nov-2018		
Asbestos Quantification - Full	06-Nov-2018		05-Nov-2018			05-Nov-2018				
Calorific Value (S)*						09-Nov-2018			09-Nov-2018	
CEN 10:1 Leachate (1 Stage)	24-Oct-2018	24-Oct-2018	24-Oct-2018		26-Oct-2018	25-Oct-2018		24-Oct-2018	25-Oct-2018	
CEN Readings	27-Oct-2018	27-Oct-2018	27-Oct-2018		02-Nov-2018	02-Nov-2018		31-Oct-2018	31-Oct-2018	
Cyanide Comp/Free/Total/Thiocyanate	30-Oct-2018	06-Nov-2018	29-Oct-2018	29-Oct-2018	14-Nov-2018	12-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018
Dissolved Metals by ICP-MS	06-Nov-2018	06-Nov-2018	06-Nov-2018		06-Nov-2018	06-Nov-2018		06-Nov-2018	06-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	31-Oct-2018	31-Oct-2018	31-Oct-2018		01-Nov-2018	31-Oct-2018		02-Nov-2018	02-Nov-2018	
EPH CWG (Aliphatic) GC (S)	30-Oct-2018	29-Oct-2018	29-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018	29-Oct-2018	26-Oct-2018	26-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	31-Oct-2018	31-Oct-2018	31-Oct-2018		01-Nov-2018	31-Oct-2018		02-Nov-2018	02-Nov-2018	
EPH CWG (Aromatic) GC (S)	30-Oct-2018	29-Oct-2018	29-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018	29-Oct-2018	26-Oct-2018	26-Oct-2018
GRO by GC-FID (S)	04-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018
GRO by GC-FID (W)	01-Nov-2018	01-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018	
Mercury Dissolved	05-Nov-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	05-Nov-2018		05-Nov-2018	05-Nov-2018	
Metals in solid samples by OES	26-Oct-2018	29-Oct-2018	26-Oct-2018	29-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	30-Oct-2018
PAH by GCMS	05-Nov-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	31-Oct-2018	29-Oct-2018	02-Nov-2018	29-Oct-2018
PAH Spec MS - Aqueous (W)	31-Oct-2018	31-Oct-2018	31-Oct-2018		30-Oct-2018	31-Oct-2018		02-Nov-2018	02-Nov-2018	
pH	05-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018
pH Value	05-Nov-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	05-Nov-2018		02-Nov-2018	02-Nov-2018	
Phenols by HPLC (S)	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018	29-Oct-2018	02-Nov-2018	02-Nov-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	06-Nov-2018	07-Nov-2018	06-Nov-2018	02-Nov-2018	31-Oct-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
Total Sulphate	30-Oct-2018		26-Oct-2018			30-Oct-2018		26-Oct-2018		
Total Sulphur	26-Oct-2018		25-Oct-2018			26-Oct-2018		25-Oct-2018		
TPH CWG (W)	01-Nov-2018	01-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018		02-Nov-2018	02-Nov-2018	
TPH CWG GC (S)	04-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018
VOC MS (S)	02-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	06-Nov-2018	03-Nov-2018	05-Nov-2018	05-Nov-2018	03-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-12	**Client Reference:**		**Report Number:**	480979
Location:	Llanwern	**Order Number:**	LLA493	**Superseded Report:**	480401

Lab Sample No(s)	18580626	18580700	18580708	18580400	18580458	18580528
Customer Sample Ref.	3C-L2	3C-L2	3C-L2-V	3C-M2	3C-M2	3C-M2-V
AGS Ref.						
Depth	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.40 - 1.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		25-Oct-2018		31-Oct-2018		
Ammoniacal Nitrogen	01-Nov-2018	01-Nov-2018		31-Oct-2018	01-Nov-2018	
Ammonium Soil by Titration	02-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	06-Nov-2018	05-Nov-2018
Anions by Kone (soil)		26-Oct-2018		30-Oct-2018		
Asbestos ID in Solid Samples		05-Nov-2018		05-Nov-2018		
CEN 10:1 Leachate (1 Stage)	25-Oct-2018	25-Oct-2018		26-Oct-2018	25-Oct-2018	
CEN Readings	31-Oct-2018	31-Oct-2018		02-Nov-2018	31-Oct-2018	
Cyanide Comp/Free/Total/Thiocyanate	06-Nov-2018	05-Nov-2018	29-Oct-2018	06-Nov-2018	06-Nov-2018	29-Oct-2018
Dissolved Metals by ICP-MS	06-Nov-2018	06-Nov-2018		06-Nov-2018	06-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	02-Nov-2018	02-Nov-2018		06-Nov-2018	02-Nov-2018	
EPH CWG (Aliphatic) GC (S)	30-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	02-Nov-2018	02-Nov-2018		06-Nov-2018	02-Nov-2018	
EPH CWG (Aromatic) GC (S)	30-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018
GRO by GC-FID (S)	31-Oct-2018	05-Nov-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018
GRO by GC-FID (W)	01-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018	
Mercury Dissolved	06-Nov-2018	05-Nov-2018		06-Nov-2018	06-Nov-2018	
Metals in solid samples by OES	30-Oct-2018	25-Oct-2018	30-Oct-2018	31-Oct-2018	31-Oct-2018	29-Oct-2018
PAH by GCMS	29-Oct-2018	25-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018
PAH Spec MS - Aqueous (W)	02-Nov-2018	02-Nov-2018		31-Oct-2018	02-Nov-2018	
pH	05-Nov-2018	06-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018
pH Value	02-Nov-2018	02-Nov-2018		05-Nov-2018	02-Nov-2018	
Phenols by HPLC (S)	05-Nov-2018	06-Nov-2018	05-Nov-2018	06-Nov-2018	02-Nov-2018	05-Nov-2018
Sample description	24-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	06-Nov-2018	02-Nov-2018	06-Nov-2018	02-Nov-2018	07-Nov-2018	06-Nov-2018
Total Sulphate		30-Oct-2018		30-Oct-2018		
Total Sulphur		24-Oct-2018		01-Nov-2018		
TPH CWG (W)	02-Nov-2018	02-Nov-2018		06-Nov-2018	02-Nov-2018	
TPH CWG GC (S)	31-Oct-2018	05-Nov-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018
VOC MS (S)	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018

CERTIFICATE OF ANALYSIS

Work Order	: **PR18B1829**	Issue Date	: 07-Nov-2018
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: Calorific Value on Soil Samples 181023-12	Page	: 1 of 2
Order number	:	Date Samples Received	: 25-Oct-2018
		Quote number	: PR2018ALSAL-GB0001 (CZ-256-17-1008)
Site	: ----	Date of test	: 26-Oct-2018 - 07-Nov-2018
Sampled by	: ----	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.
The laboratory declares that the test results relate only to the listed samples.
The IC determination of chlorides, fluorides, sulfates and nitrates, as needed for the calculation of reported results, was performed using an accredited method of a subcontractor.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2005

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

Analytical Results

Sub-Matrix: SOIL	Client sample ID	18592389 3C-J2		18584150 3C-K2		----	
	Laboratory sample ID	PR18B1829-001		PR18B1829-002		----	
	Client sampling date / time	19-Oct-2018 00:00		19-Oct-2018 00:00		----	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	**10.8**	± 10.5%	**19.8**	± 10.1%	----	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	**9.06**	± 10.6%	**16.9**	± 10.2%	----	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	**10.6**	± 10.5%	**19.6**	± 10.1%	----	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	**8.50**	± 10.7%	**16.3**	± 10.2%	----	----
Water Analytical M(ad)	I-WA-GR	0.50	%	**0.87**	± 43.0%	**1.16**	± 35.0%	----	----
Water Gross M(ex)	I-WG-GR	0.50	%	**15.5**	± 20.1%	**13.9**	± 20.1%	----	----
Water Total M(ar)	I-WT-CC	0.50	%	**16.2**	----	**14.9**	----	----	----

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, delivery date in brackets without a time component will be displayed instead. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN ISO 18125, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3, CSN P CEN/TS 16023) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.

Preparation Methods	Method Descriptions
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN 14918, CSN EN 15400, CSN EN 15170) Determination of gross calorific value by calorimetric method and calculation of net calorific value.
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.

The calculation methods of summation parameters are available on request in the client service.

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	12 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181023-13
Your Reference:	
Location:	Llanwern
Report No:	480663

This report has been revised and directly supersedes 480662 in its entirety.

We received 45 samples on Tuesday October 23, 2018 and 45 of these samples were scheduled for analysis which was completed on Monday November 12, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18580702	3C-F3		0.50 - 0.50	22/10/2018
18580709	3C-F3		1.00 - 1.00	22/10/2018
18580717	3C-F3		2.00 - 2.00	22/10/2018
18580624	3C-F4		0.50 - 0.50	22/10/2018
18580633	3C-F4		1.10 - 1.10	22/10/2018
18580643	3C-F4		1.50 - 1.50	22/10/2018
18580724	3C-F3-V		2.80 - 2.80	22/10/2018
18580651	3C-F4-V		2.70 - 2.70	22/10/2018
18580597	3C-G1		0.50 - 0.50	22/10/2018
18580605	3C-G1		1.00 - 1.00	22/10/2018
18580668	3C-G3		0.50 - 0.50	22/10/2018
18580676	3C-G3		1.00 - 1.00	22/10/2018
18580694	3C-G3		1.50 - 1.50	22/10/2018
18580616	3C-G1-V		1.70 - 1.70	22/10/2018
18580545	3C-H1		0.25 - 0.25	22/10/2018
18580556	3C-H1		0.50 - 0.50	22/10/2018
18580564	3C-H1		1.00 - 1.00	22/10/2018
18580661	3C-H3		0.50 - 0.50	22/10/2018
18580572	3C-H1-V		1.25 - 1.25	22/10/2018
18580511	3C-I1		0.50 - 0.50	22/10/2018
18580519	3C-I1		1.00 - 1.00	22/10/2018
18580527	3C-I1		1.50 - 1.50	22/10/2018
18580535	3C-I1-V		1.70 - 1.70	22/10/2018
18580836	3C-J1		0.50 - 0.50	22/10/2018
18580844	3C-J1		1.00 - 1.00	22/10/2018
18580495	3C-J1		1.50 - 1.50	22/10/2018
18580503	3C-J1-V		1.80 - 1.80	22/10/2018
18580762	3C-K1		0.50 - 0.50	22/10/2018
18580813	3C-K1		1.00 - 1.00	22/10/2018
18580818	3C-K1		1.50 - 1.50	22/10/2018
18580829	3C-K1-V		1.70 - 1.70	22/10/2018
18580791	3C-L7		0.50 - 0.50	22/10/2018
18580797	3C-L7		1.00 - 1.00	22/10/2018
18580806	3C-L7-V		2.50 - 2.50	22/10/2018
18580757	3C-M7		0.50 - 0.50	22/10/2018
18580770	3C-M7		1.00 - 1.00	22/10/2018
18580779	3C-M7		2.00 - 2.00	22/10/2018
18580734	3C-M8		0.50 - 0.50	22/10/2018
18580742	3C-M8		1.00 - 1.00	22/10/2018
18580746	3C-M8		2.00 - 2.00	22/10/2018
18580482	3C-ML1		0.60 - 0.60	22/10/2018
18580582	3C-ML1		1.00 - 1.00	22/10/2018
18580685	3C-ML1-V		1.60 - 1.60	22/10/2018
18580785	3C-M7-V		3.30 - 3.30	22/10/2018
18580753	3C-M8-V		3.50 - 3.50	22/10/2018

Maximum Sample/Coolbox Temperature (°C) : **7.4**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	18580702			18580709			18580717			18580624			18580633			18580643			18580724
			Customer Sample Reference	3C-F3			3C-F3			3C-F3			3C-F4			3C-F4			3C-F4			3C-F3-V
			AGS Reference																			
			Depth (m)	0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			0.50 - 0.50			1.10 - 1.10			1.50 - 1.50			2.80 - 2.80
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 19			X						X			X						X		
Ammoniacal Nitrogen	All	NDPs: 1 Tests: 33		X			X			X			X			X			X			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 45			X			X			X			X			X			X		X
Anions by Kone (soil)	All	NDPs: 0 Tests: 19			X						X			X						X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 19		X						X			X						X			
CEN Readings	All	NDPs: 0 Tests: 33		X			X			X			X			X			X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 1 Tests: 78		X	X		X	X		X	X		X	X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 1 Tests: 33		X			X			X			X			X			X			
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 1 Tests: 33		X			X			X			X			X			X			
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 45			X			X			X			X			X			X		X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 1 Tests: 33		X			X			X			X			X			X			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 45			X			X			X			X			X			X		X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 45				X			X			X			X			X			X	
GRO by GC-FID (W)	All	NDPs: 1 Tests: 33		X			X			X			X			X			X			
Mercury Dissolved	All	NDPs: 1 Tests: 33		X			X			X			X			X			X			

18580545	3C-H1		0.25 - 0.25	1kg TUB	S			x					x	x		x	x			x				x	x
18580616	3C-G1-V		1.70 - 1.70	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S					x				x				x				x				
18580694	3C-G3		1.50 - 1.50	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S		x			x		x				x				x				x			
				1kg TUB	S				x				x		x		x		x					x		x
18580676	3C-G3		1.00 - 1.00	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S					x				x				x				x				
				1kg TUB	S			x					x	x		x	x			x				x	x
18580668	3C-G3		0.50 - 0.50	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S		x			x		x				x				x				x			
				1kg TUB	S			x				x	x		x		x		x					x		x
18580605	3C-G1		1.00 - 1.00	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S					x				x				x				x				
				1kg TUB	S			x					x	x		x	x			x				x	x
18580597	3C-G1		0.50 - 0.50	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S		x			x		x				x				x				x			
				1kg TUB	S			x				x	x		x		x		x					x		x
18580651	3C-F4-V		2.70 - 2.70	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S					x				x				x				x				
18580724	3C-F3-V		2.80 - 2.80	60g VOC (ALE215)	S																		x		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

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18580545	3C-H1		0.25 - 0.25	1kg TUB	S			X		X						X				
18580616	3C-G1-V		1.70 - 1.70	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X					X		
18580694	3C-G3		1.50 - 1.50	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X			X		
				1kg TUB	S			X		X						X				
18580676	3C-G3		1.00 - 1.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X					X		
				1kg TUB	S			X		X						X				
18580668	3C-G3		0.50 - 0.50	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X			X		
				1kg TUB	S			X		X						X				
18580605	3C-G1		1.00 - 1.00	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X					X		
				1kg TUB	S			X		X						X				
18580597	3C-G1		0.50 - 0.50	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X	X	X			X		
				1kg TUB	S			X		X						X				
18580651	3C-F4-V		2.70 - 2.70	60g VOC (ALE215)	S															X
				250g Amber Jar (ALE210)	S	X	X		X		X	X	X					X		
18580724	3C-F3-V		2.80 - 2.80	60g VOC (ALE215)	S															X

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	18580545	18580556	18580564	18580661	18580572	18580511	18580519
			Customer Sample Reference	3C-H1	3C-H1	3C-H1	3C-H3	3C-H1-V	3C-I1	3C-I1
			AGS Reference							
			Depth (m)	0.25 - 0.25	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.25 - 1.25	0.50 - 0.50	1.00 - 1.00
			Container	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60ml red top tub	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 19					X					X							X								
Ammoniacal Nitrogen	All	NDPs: 1 Tests: 33				X			X					N					X			X					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 45	X			X			X			X			X				X				X				
Anions by Kone (soil)	All	NDPs: 0 Tests: 19				X						X							X								
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 19			X							X							X								
Asbestos Quantification - Full	All	NDPs: 1 Tests: 1										N															
CEN Readings	All	NDPs: 0 Tests: 33			X			X											X			X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 1 Tests: 78	X		X	X		X	X			X		N		X			X	X		X	X				
Dissolved Metals by ICP-MS	All	NDPs: 1 Tests: 33			X			X						N					X			X					
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 1 Tests: 33			X			X						N					X			X					
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 45	X			X			X			X			X				X				X				
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 1 Tests: 33			X			X						N					X			X					
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 45	X			X			X			X			X				X				X				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 45		X			X			X			X			X				X				X				X
GRO by GC-FID (W)	All	NDPs: 1 Tests: 33			X			X						N					X			X					

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18580545		18580556			18580564			18580661		18580572		18580511			18580519	
Customer Sample Reference			3C-H1		3C-H1			3C-H1			3C-H3		3C-H1-V		3C-I1			3C-I1	
AGS Reference																			
Depth (m)			0.25 - 0.25		0.50 - 0.50			1.00 - 1.00			0.50 - 0.50		1.25 - 1.25		0.50 - 0.50			1.00 - 1.00	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	60ml red top tub	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 1 Tests: 33			X			X					N			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 45	X			X			X		X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 45	X			X			X		X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 1 Tests: 33			X			X					N			X			X		
pH	All	NDPs: 0 Tests: 45	X			X			X		X			X			X			X	
pH Value	All	NDPs: 1 Tests: 33			X			X					N			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 45	X			X			X		X			X			X			X	
Sample description	All	NDPs: 0 Tests: 45	X			X			X		X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 45	X			X			X		X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 19				X					X						X				
Total Sulphur	All	NDPs: 0 Tests: 19				X					X						X				
TPH CWG (W)	All	NDPs: 1 Tests: 33			X			X					N			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 45	X			X			X		X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 45		X			X			X		X			X			X			X

18580813	3C-K1		1.00 - 1.00	250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X					
				1kg TUB	S	X			X		X								X				
18580762	3C-K1		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X					
				1kg TUB	S	X			X		X								X				
18580503	3C-J1-V		1.80 - 1.80	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X					
18580495	3C-J1		1.50 - 1.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X					
				1kg TUB	S	X			X		X								X				
18580844	3C-J1		1.00 - 1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X					
				1kg TUB	S	X			X		X								X				
18580836	3C-J1		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X					
				1kg TUB	S	X			X		X								X				
18580535	3C-I1-V		1.70 - 1.70	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X					
18580527	3C-I1		1.50 - 1.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X					
				1kg TUB	S	X			X		X								X				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																		
			18580813			18580818			18580829			18580791			18580797			18580806			18580757			18580770	
			Customer Sample Reference																						
			3C-K1			3C-K1			3C-K1-V			3C-L7			3C-L7			3C-L7-V			3C-M7			3C-M7	
			AGS Reference																						
			Depth (m)			1.00 - 1.00			1.50 - 1.50			1.70 - 1.70			0.50 - 0.50			1.00 - 1.00			2.50 - 2.50			0.50 - 0.50			1.00 - 1.00	
			Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	
			Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 19						X								X					X				
Ammoniacal Nitrogen	All	NDPs: 1 Tests: 33			X						X			X						X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 45					X		X			X			X		X			X				X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 19					X								X					X					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 19		X										X					X						
Asbestos Quantification - Full	All	NDPs: 1 Tests: 1												X											
CEN Readings	All	NDPs: 0 Tests: 33		X							X			X					X				X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 1 Tests: 78		X	X		X		X	X		X	X		X		X	X			X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 1 Tests: 33		X					X			X							X				X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 1 Tests: 33		X					X			X							X				X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 45			X		X			X			X		X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 1 Tests: 33		X					X			X							X				X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 45			X		X			X			X		X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 45	X			X		X			X			X			X		X			X			
GRO by GC-FID (W)	All	NDPs: 1 Tests: 33		X					X			X							X				X		

18580685	3C-ML1-V		1.60 - 1.60	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
18580582	3C-ML1		1.00 - 1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X		X				X		X
18580482	3C-ML1		0.60 - 0.60	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X		X	X	X	X		X				X		X
18580746	3C-M8		2.00 - 2.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X		X				X		X
18580742	3C-M8		1.00 - 1.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X		X	X	X	X		X				X		X
18580734	3C-M8		0.50 - 0.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X				X			X			
				1kg TUB	S		X					X	X	X	X		X				X		X
18580779	3C-M7		2.00 - 2.00	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X			
				1kg TUB	S		X			X		X	X	X	X		X				X		X
18580770	3C-M7		1.00 - 1.00	60g VOC (ALE215)	S																	X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18580813	18580818		18580829		18580791			18580797			18580806		18580757			18580770	
Customer Sample Reference			3C-K1	3C-K1		3C-K1-V		3C-L7			3C-L7			3C-L7-V		3C-M7			3C-M7	
AGS Reference																				
Depth (m)			1.00 - 1.00	1.50 - 1.50		1.70 - 1.70		0.50 - 0.50			1.00 - 1.00			2.50 - 2.50		0.50 - 0.50			1.00 - 1.00	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 1 Tests: 33		X					X			X					X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 45			X		X			X			X		X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 45			X		X			X			X		X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 1 Tests: 33		X					X			X					X			X	
pH	All	NDPs: 0 Tests: 45			X		X			X			X		X			X			X
pH Value	All	NDPs: 1 Tests: 33		X					X			X					X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 45			X		X			X			X		X			X			X
Sample description	All	NDPs: 0 Tests: 45			X		X			X			X		X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 45			X		X			X			X		X			X			X
Total Sulphate	All	NDPs: 0 Tests: 19			X								X					X			
Total Sulphur	All	NDPs: 0 Tests: 19			X								X					X			
TPH CWG (W)	All	NDPs: 1 Tests: 33		X					X			X					X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 45			X		X			X			X		X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 45	X			X		X			X			X		X			X		

18580685	3C-ML1-V		1.60 - 1.60	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
18580582	3C-ML1		1.00 - 1.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
				1kg TUB	S	X			X		X							X			
18580482	3C-ML1		0.60 - 0.60	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X	
				1kg TUB	S	X			X		X							X			
18580746	3C-M8		2.00 - 2.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
				1kg TUB	S	X			X		X							X			
18580742	3C-M8		1.00 - 1.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X	
				1kg TUB	S	X			X		X							X			
18580734	3C-M8		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
				1kg TUB	S	X			X		X							X			
18580779	3C-M7		2.00 - 2.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X	
				1kg TUB	S	X			X		X							X			
18580770	3C-M7		1.00 - 1.00	60g VOC (ALE215)	S																X

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18580785		18580753	
Customer Sample Reference			3C-M7-V		3C-M8-V	
AGS Reference						
Depth (m)			3.30 - 3.30		3.50 - 3.50	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 45	X		X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 1 Tests: 78	X		X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 45	X		X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 45	X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 45		X		X
Metals in solid samples by OES	All	NDPs: 0 Tests: 45	X		X	
PAH by GCMS	All	NDPs: 0 Tests: 45	X		X	
pH	All	NDPs: 0 Tests: 45	X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 45	X		X	
Sample description	All	NDPs: 0 Tests: 45	X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 45	X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 45	X		X	
VOC MS (S)	All	NDPs: 0 Tests: 45		X		X

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18580702	3C-F3	0.50 - 0.50	Black	Loamy Sand	Stones	Vegetation
18580709	3C-F3	1.00 - 1.00	Black	Sand	Stones	Vegetation
18580717	3C-F3	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Vegetation
18580624	3C-F4	0.50 - 0.50	Dark Brown	Sandy Clay Loam	Stones	Stones
18580633	3C-F4	1.10 - 1.10	Dark Brown	Loamy Sand	Stones	Stones
18580643	3C-F4	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
18580724	3C-F3-V	2.80 - 2.80	Dark Brown	Silty Clay	None	None
18580651	3C-F4-V	2.70 - 2.70	Dark Brown	Clay Loam	Vegetation	None
18580597	3C-G1	0.50 - 0.50	Dark Brown	Sand	Stones	Crushed Brick
18580605	3C-G1	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	Crushed Brick
18580668	3C-G3	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Crushed Brick
18580676	3C-G3	1.00 - 1.00	Black	Loamy Sand	Stones	None
18580694	3C-G3	1.50 - 1.50	Black	Loamy Sand	Stones	Vegetation
18580616	3C-G1-V	1.70 - 1.70	Dark Brown	Sandy Clay Loam	Stones	Vegetation
18580545	3C-H1	0.25 - 0.25	Dark Brown	Sandy Loam	Vegetation	Stones
18580556	3C-H1	0.50 - 0.50	Dark Brown	Stone/Soil	Stones	N/A
18580564	3C-H1	1.00 - 1.00	Dark Brown	Stone/Soil	Vegetation	Stones
18580661	3C-H3	0.50 - 0.50	Black	Stone/Soil	Stones	N/A
18580572	3C-H1-V	1.25 - 1.25	Dark Brown	Sandy Loam	Vegetation	Stones
18580511	3C-I1	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Crushed Brick
18580519	3C-I1	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18580527	3C-I1	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	None
18580535	3C-I1-V	1.70 - 1.70	Dark Brown	Clay Loam	None	None
18580495	3C-J1	1.50 - 1.50	Dark Brown	Sand	Stones	Crushed Brick
18580836	3C-J1	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18580844	3C-J1	1.00 - 1.00	Black	Stone/Soil	Stones	Vegetation
18580503	3C-J1-V	1.80 - 1.80	Grey	Silt Loam	Vegetation	N/A
18580762	3C-K1	0.50 - 0.50	Light Brown	Loamy Sand	Stones	Vegetation
18580813	3C-K1	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Brick
18580818	3C-K1	1.50 - 1.50	Black	Loamy Sand	Stones	Vegetation
18580829	3C-K1-V	1.70 - 1.70	Black	Silt Loam	N/A	N/A
18580791	3C-L7	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Crushed Brick
18580797	3C-L7	1.00 - 1.00	Dark Brown	Sandy Silt Loam	Stones	Vegetation
18580806	3C-L7-V	2.50 - 2.50	Dark Brown	Sandy Clay	Vegetation	None
18580757	3C-M7	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18580770	3C-M7	1.00 - 1.00	Black	Loamy Sand	Stones	Vegetation
18580779	3C-M7	2.00 - 2.00	Black	Loamy Sand	Stones	Crushed Brick
18580734	3C-M8	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

			Colour	Description	Inclusions	Inclusions 2
18580742	3C-M8	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Stones
18580746	3C-M8	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Crushed Brick
18580482	3C-ML1	0.60 - 0.60	Dark Brown	Loamy Sand	Stones	Crushed Brick
18580582	3C-ML1	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
18580685	3C-ML1-V	1.60 - 1.60	Dark Brown	Silty Clay Loam	Stones	Vegetation
18580785	3C-M7-V	3.30 - 3.30	Dark Brown	Sandy Clay Loam	Stones	None
18580753	3C-M8-V	3.50 - 3.50	Dark Brown	Silty Clay	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-F3	3C-F3	3C-F3	3C-F4	3C-F4	3C-F4
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.10 - 1.10	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580702	18580709	18580717	18580624	18580633	18580643
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		18	13	11	10	7.4	9.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0115 M	0.0113 M	0.0111 M	0.0108 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.184		0.212	0.0885		0.199
Sulphate, Total potential	<0.06 %	TM132		0.552		0.636	0.266		0.597
Soil Organic Matter (SOM)	<0.35 %	TM132		13.3 #	26.4 #	0.49 #	2.95 #	42.6 #	8.91 #
pH	1 pH Units	TM133		7.86 M	8.36 M	12.1 M	8.53 M	9.99 M	12.8 M
Cyanide, Total	<1 mg/kg	TM153		10.5 M	9.68 ♦ M	1.72 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 ♦ M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		15.8 M	13.6 M	9.29 M	15.4 M	8.21 M	11.1 M
Cadmium	<0.02 mg/kg	TM181		6.44 M	4.95 M	<0.2 M	<0.02 M	<0.02 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		217 M	110 M	619 M	29.1 M	110 M	459 M
Copper	<1.4 mg/kg	TM181		44.5 M	83.7 M	29.7 M	11.2 M	13.4 M	36.3 M
Iron	<1000 mg/kg	TM181		202000 #	223000 #	205000 #	29600 #	58400 #	187000 #
Lead	<0.7 mg/kg	TM181		737 M	518 M	46.2 M	19.1 M	22 M	16.8 M
Manganese	<0.13 mg/kg	TM181		17700 M	20000 M	48300 M	551 M	6120 M	35000 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		35.5 M	31.8 M	20.6 M	31.7 M	22.9 M	27.7 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	22 #	<1 #	2.75 #	15.9 #
Vanadium	<0.2 mg/kg	TM181		284 #	141 #	830 #	55.5 #	106 #	654 #
Zinc	<1.9 mg/kg	TM181		3440 M	2600 M	395 M	107 M	78 M	65.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.117		0.651	0.0361		0.488
Calcium	<21 mg/kg	TM224		101000		189000	22900		181000
Magnesium	<8 mg/kg	TM224		12900		8530	10300		8320
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.117 M		0.0949 M	0.0789 M		0.0261 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-F3-V	3C-F4-V	3C-G1	3C-G1	3C-G3	3C-G3
			Depth (m)	2.80 - 2.80	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580724	18580651	18580597	18580605	18580668	18580676
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		23	34	7.8	8.1	15	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		195 M	234 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0351 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0109 M	<0.01 M	0.117 M	0.0113 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	0.0351 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.187 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.321		0.178	
Sulphate, Total potential	<0.06 %	TM132				0.963		0.534	
Soil Organic Matter (SOM)	<0.35 %	TM132		2.02 #	6.33 ♦ #	5.45 #	1.21 #	10.5 #	19.5 #
pH	1 pH Units	TM133		9.07 M	8 M	10.6 M	8.61 M	8.03 M	10.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 ♦ M	<1 M	2.46 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 ♦ M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13.2 M	13.6 M	9.3 M	10.6 M	11.1 M	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.096 M	1.22 M	0.0723 M	1.25 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		59.8 M	44 M	83.2 M	24.4 M	122 M	444 M
Copper	<1.4 mg/kg	TM181		21.4 M	23.8 M	23.8 M	19.9 M	24.6 M	<14 M
Iron	<1000 mg/kg	TM181		51900 #	31800 #	84100 #	45900 #	62000 #	145000 #
Lead	<0.7 mg/kg	TM181		27.5 M	36.8 M	74.9 M	47.9 #	162 M	20.1 M
Manganese	<0.13 mg/kg	TM181		1810 M	1140 M	10600 M	1660 M	10300 M	19700 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		35.1 M	26.5 M	25.9 M	33.5 M	18.4 M	14.3 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<10 #	1.01 #	4.67 #	11.7 #
Vanadium	<0.2 mg/kg	TM181		91.9 #	65.5 #	141 #	39.5 #	211 #	305 #
Zinc	<1.9 mg/kg	TM181		132 M	124 M	236 M	131 M	689 M	102 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.575		0.177	
Calcium	<21 mg/kg	TM224				128000		85100	
Magnesium	<8 mg/kg	TM224				20500		7810	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.147 M		0.308 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-G3	3C-G1-V	3C-H1	3C-H1	3C-H1	3C-H3
			Depth (m)	1.50 - 1.50	1.70 - 1.70	0.25 - 0.25	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580694	18580616	18580545	18580556	18580564	18580661
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	20	8.3	9.8	19	5.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	79.3 M	<12 M	<12 #	<12 #	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 #	<0.01 #	<0.01 #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 #	<0.01 #	<0.01 #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 #	<0.015 #	<0.015 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 #	<0.035 #	<0.035 #
Sulphur, Total	<0.02 %	TM132		0.154			0.365		0.126
Sulphate, Total potential	<0.06 %	TM132		0.462			1.1		0.378
Soil Organic Matter (SOM)	<0.35 %	TM132		24.8 #	0.912 #	3.22 #	1.65 #	3.36 #	3.81 #
pH	1 pH Units	TM133		12.1 M	8.08 M	8.9 M	8.38 #	7.53 #	12.6 #
Cyanide, Total	<1 mg/kg	TM153		1.34 M	<1 ♦ M	<1 M	<1 #	<1 #	<1 #
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 ♦ M	<1 M	<1 #	<1 #	<1 #
Arsenic	<0.6 mg/kg	TM181		8.52 M	9.98 M	11.1 M	20.4 #	14.1 #	<6 #
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	<0.02 M	0.252 #	1.01 #	<0.2 #
Chromium	<0.9 mg/kg	TM181		300 M	24.3 M	49.7 M	11.7 #	10.1 #	678 #
Copper	<1.4 mg/kg	TM181		16.6 M	12.3 M	17.7 M	15.6 #	17.8 #	<14 #
Iron	<1000 mg/kg	TM181		144000 #	37300 #	51200 #	22600 #	27800 #	165000 #
Lead	<0.7 mg/kg	TM181		59.5 M	21.5 M	20.8 M	38.4 #	31.7 #	<7 #
Manganese	<0.13 mg/kg	TM181		29900 M	621 M	4470 M	3790 #	2500 #	29900 #
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 #	<0.14 #	<1.4 #
Nickel	<0.2 mg/kg	TM181		16.9 M	32.5 M	21.1 M	16.5 #	17.7 #	6.26 #
Selenium	<1 mg/kg	TM181		<10 #	<1 #	2.25 #	3.21 #	2.45 #	14.6 #
Vanadium	<0.2 mg/kg	TM181		248 #	43.3 #	187 #	53.3 #	30.4 #	512 #
Zinc	<1.9 mg/kg	TM181		311 M	92.1 M	98.7 M	168 #	227 #	46.2 #
Sulphate, acid soluble (total)	<0.02 %	TM221		0.291			0.33		0.292
Calcium	<21 mg/kg	TM224		139000			107000		201000
Magnesium	<8 mg/kg	TM224		24900			18800		33800
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.115 M			0.101 #		0.0353 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-H1-V	3C-I1	3C-I1	3C-I1	3C-I1-V	3C-J1
			Depth (m)	1.25 - 1.25	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	1.70 - 1.70	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580572	18580511	18580519	18580527	18580535	18580836
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		22	4.9	8.9	8.6	20	8.4
Exchangeable Ammonia as N	<12 mg/kg	TM024		116 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.0927		0.134		
Sulphate, Total potential	<0.06 %	TM132			0.278		0.402		
Soil Organic Matter (SOM)	<0.35 %	TM132		3.24 #	1.05 ♦ #	2 #	6 #	0.609 #	4.43 #
pH	1 pH Units	TM133		7.48 M	9.9 M	8.64 M	9.02 M	8.27 M	9.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13.4 M	6.3 M	10.7 M	9 M	7.45 M	9.52 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		35.1 M	64.5 M	12.7 M	11.7 M	21.4 M	23.4 M
Copper	<1.4 mg/kg	TM181		21.5 M	13.2 M	15.3 M	17.6 M	8.03 M	18.3 M
Iron	<1000 mg/kg	TM181		39800 #	61100 #	40000 #	50100 #	22100 #	50800 #
Lead	<0.7 mg/kg	TM181		21.9 M	19.2 M	37.2 M	26.7 M	13 M	27.6 M
Manganese	<0.13 mg/kg	TM181		286 M	4990 M	1210 M	1720 M	586 M	2440 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		26.3 M	10.4 M	33.9 M	19.1 M	25.3 M	20.5 M
Selenium	<1 mg/kg	TM181		<1 #	1.4 #	<1 #	<1 #	<1 #	1.28 #
Vanadium	<0.2 mg/kg	TM181		58.7 #	93.3 #	31.2 #	46.4 #	35.8 #	57 #
Zinc	<1.9 mg/kg	TM181		90.6 M	87.9 M	118 M	95.9 M	71.1 M	116 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.194		0.154		
Calcium	<21 mg/kg	TM224			195000		121000		
Magnesium	<8 mg/kg	TM224			55700		48300		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.108 M		0.117 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J1	3C-J1	3C-J1-V	3C-K1	3C-K1	3C-K1
			Depth (m)	1.00 - 1.00	1.50 - 1.50	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580844	18580495	18580503	18580762	18580813	18580818
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5.1	11	20	4.6	7	30
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	<12 M	36.3 M	<12 M	<12 M	41.5 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 #	<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0142 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 #	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 #	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.112			0.0351		0.13
Sulphate, Total potential	<0.06 %	TM132		0.336			0.105		0.39
Soil Organic Matter (SOM)	<0.35 %	TM132		1.56 #	5.05 #	0.672 #	2.02 #	1.55 ♦ #	5.83 #
pH	1 pH Units	TM133		10.2 #	8.65 M	8.28 M	8.24 M	8.63 M	6.53 M
Cyanide, Total	<1 mg/kg	TM153		<1 #	<1 M	<1 M	<1 M	<1 M	<1 ♦ M
Cyanide, Free	<1 mg/kg	TM153		<1 #	<1 M	<1 M	<1 M	<1 M	<1 ♦ M
Arsenic	<0.6 mg/kg	TM181		6.55 #	8.91 M	9.7 M	5.44 M	8.83 M	14.2 M
Cadmium	<0.02 mg/kg	TM181		<0.02 #	<0.02 M	<0.02 M	0.15 M	<0.2 M	1.1 M
Chromium	<0.9 mg/kg	TM181		118 #	13.3 M	19.7 M	9.44 M	97.2 M	17.4 M
Copper	<1.4 mg/kg	TM181		15.2 #	24 M	9 M	23.8 M	21.3 M	21.3 M
Iron	<1000 mg/kg	TM181		45300 #	17900 #	27300 #	13200 #	115000 #	63100 #
Lead	<0.7 mg/kg	TM181		37.6 #	24.7 M	13.1 M	12.8 M	33.4 M	39.3 M
Manganese	<0.13 mg/kg	TM181		6530 #	913 M	1140 M	341 M	11900 M	8420 M
Mercury	<0.14 mg/kg	TM181		<0.14 #	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		13.6 #	30.1 M	28.7 M	24.5 M	19.1 M	28.2 M
Selenium	<1 mg/kg	TM181		2.57 #	<1 #	<1 #	<1 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		144 #	33.5 #	36.2 #	15 #	127 #	48.2 #
Zinc	<1.9 mg/kg	TM181		94.2 #	70.3 M	73.8 M	60 M	75.3 M	118 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.211			0.023		0.228
Calcium	<21 mg/kg	TM224		126000			2440		43000
Magnesium	<8 mg/kg	TM224		37100			2210		14600
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0552 #			0.0402 M		0.225 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K1-V	3C-L7	3C-L7	3C-L7-V	3C-M7	3C-M7
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580829	18580791	18580797	18580806	18580757	18580770
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		23	9.6	12	30	12	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		26.7 M	<12 M	<12 M	297 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0555 M	0.125 M	0.0143 M	0.0113 M	0.366 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0222 M	0.0228 M	0.0286 M	<0.01 M	0.0555 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0333 M	<0.015 M	<0.015 M	<0.015 M	0.0333 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.111 M	0.148 M	<0.035 M	<0.035 M	0.455 M
Sulphur, Total	<0.02 %	TM132				0.365		0.115	
Sulphate, Total potential	<0.06 %	TM132				1.1		0.345	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.36 #	9.88 #	12.3 #	8.31 ♦#	12 #	14.9 #
pH	1 pH Units	TM133		7.56 M	10.4 M	11.3 M	6.88 M	8.87 M	11.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.66 M	<1 M	<1 M	1.14 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13.4 M	6.54 M	6.54 M	13.1 M	8.16 M	7.57 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	0.0685 M	0.363 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		31.6 M	461 M	358 M	37.3 M	87.4 M	93.9 M
Copper	<1.4 mg/kg	TM181		16.4 M	11.3 M	10.5 M	21.1 M	24.2 M	19.4 M
Iron	<1000 mg/kg	TM181		26700 #	78100 #	126000 #	22400 #	31200 #	56200 #
Lead	<0.7 mg/kg	TM181		21.1 M	23.2 M	15.7 M	31.8 M	53.3 M	22.5 M
Manganese	<0.13 mg/kg	TM181		453 M	25400 M	36100 M	506 M	3300 M	9310 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		35.5 M	10 M	6.11 M	24.5 M	12.8 M	13.8 M
Selenium	<1 mg/kg	TM181		<1 #	7.05 #	11.7 #	<1 #	1.53 #	4.31 #
Vanadium	<0.2 mg/kg	TM181		52.5 #	344 #	394 #	52.7 #	78.3 #	227 #
Zinc	<1.9 mg/kg	TM181		105 M	143 M	72.4 M	117 M	192 M	92.2 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.438		0.199	
Calcium	<21 mg/kg	TM224				180000		109000	
Magnesium	<8 mg/kg	TM224				8120		44400	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.145 M		0.115 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				<0.001 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #			
Additional Asbestos Components (Using TM048)		TM304				None #			
Analysts Comments		TM304				N/C			
Asbestos Quantification - Total - %	<0.001 %	TM304				<0.001 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-M7	3C-M8	3C-M8	3C-M8	3C-ML1	3C-ML1
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.60 - 0.60	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580779	18580734	18580742	18580746	18580482	18580582
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		14	3.6	12	12	6.8	9.3
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	16.1 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.209 M	<0.01 M	0.0228 M	0.228 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0464 M	0.0104 M	0.0114 M	0.0798 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	0.0228 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.255 M	<0.035 M	<0.035 M	0.331 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.238		0.204		0.0301	
Sulphate, Total potential	<0.06 %	TM132		0.714		0.612		0.0903	
Soil Organic Matter (SOM)	<0.35 %	TM132		28.8 #	9.95 ♦ #	7.76 #	16.7 #	<0.35 #	2.52 ♦ #
pH	1 pH Units	TM133		11.3 M	9.92 M	9.55 M	10.9 M	10 M	8.26 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	2.36 M	3.37 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.7 M	18 M	10.8 M	6.3 M	6.66 M	14.7 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M	0.265 M
Chromium	<0.9 mg/kg	TM181		241 M	128 M	63 M	573 M	9.6 M	13 M
Copper	<1.4 mg/kg	TM181		16.9 M	21.4 M	19.1 M	11.4 M	15.9 M	12.6 M
Iron	<1000 mg/kg	TM181		95200 #	68300 #	65900 #	80200 #	22800 #	28600 #
Lead	<0.7 mg/kg	TM181		66.1 M	50.6 M	30.7 M	81.4 M	15.7 M	28.4 M
Manganese	<0.13 mg/kg	TM181		16800 M	12900 M	3980 M	32400 M	724 M	1130 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		11.7 M	22.9 M	20.1 M	8.24 M	17.1 M	28.4 M
Selenium	<1 mg/kg	TM181		5.02 #	4.27 #	<1 #	9.54 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		318 #	168 #	93.2 #	535 #	19.7 #	21.8 #
Zinc	<1.9 mg/kg	TM181		139 M	218 M	146 M	445 M	79.8 M	199 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.319		0.475		0.0998	
Calcium	<21 mg/kg	TM224		145000		96200		72000	
Magnesium	<8 mg/kg	TM224		18400		17300		34900	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.175 M		0.197 M		0.0588 M	

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-ML1-V	3C-M7-V	3C-M8-V			
			Depth (m)	1.60 - 1.60	3.30 - 3.30	3.50 - 3.50			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	22/10/2018	22/10/2018	22/10/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	23/10/2018	23/10/2018	23/10/2018			
			SDG Ref	181023-13	181023-13	181023-13			
			Lab Sample No.(s)	18580685	18580785	18580753			
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		24	17	23			
Exchangeable Ammonia as N	<12 mg/kg	TM024		65.5 M	158 M	111 M			
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M			
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M			
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M			
Soil Organic Matter (SOM)	<0.35 %	TM132		1.1 #	1.6 #	1.29 #			
pH	1 pH Units	TM133		7.99 M	8.1 M	8 M			
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M			
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M			
Arsenic	<0.6 mg/kg	TM181		13.8 M	11.1 M	12.2 M			
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M			
Chromium	<0.9 mg/kg	TM181		25.1 M	38.3 M	30.9 M			
Copper	<1.4 mg/kg	TM181		13.7 M	18 M	11 M			
Iron	<1000 mg/kg	TM181		40000 #	27100 #	34800 #			
Lead	<0.7 mg/kg	TM181		20 M	24 M	22.3 M			
Manganese	<0.13 mg/kg	TM181		1220 M	355 M	1220 M			
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M			
Nickel	<0.2 mg/kg	TM181		32.5 M	40.8 M	35 M			
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #			
Vanadium	<0.2 mg/kg	TM181		45.9 #	59 #	52.7 #			
Zinc	<1.9 mg/kg	TM181		94.6 M	114 M	111 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-F3	3C-F3	3C-F3	3C-F4	3C-F4	3C-F4
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.10 - 1.10	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580702	18580709	18580717	18580624	18580633	18580643
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		80	88.8	81.3	88.9	70.8	116
Acenaphthene-d10 % recovery**	%	TM218		88.2	92.8	79.6	91.4	77.2	109
Phenanthrene-d10 % recovery**	%	TM218		89.7	94.1	78.2	92.7	68.6	123
Chrysene-d12 % recovery**	%	TM218		78.5	86.2	75	99.3	58.3	126
Perylene-d12 % recovery**	%	TM218		70.2	76.7	73.6	94.4	53.1	122
Naphthalene	<0.009 mg/kg	TM218		0.432 M	0.608 M	0.0918 M	<0.009 M	0.517 M	0.219 M
Acenaphthylene	<0.012 mg/kg	TM218		0.613 M	0.761 M	0.0915 M	<0.012 M	0.206 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		0.0374 M	0.0318 M	0.0104 M	<0.008 M	0.0282 M	0.0444 M
Fluorene	<0.01 mg/kg	TM218		0.172 M	0.274 M	0.0814 M	<0.01 M	0.0838 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		1.79 M	2.92 M	0.488 M	<0.015 M	1.06 M	4.27 M
Anthracene	<0.016 mg/kg	TM218		0.754 M	1.01 M	0.158 M	<0.016 M	0.287 M	0.3 M
Fluoranthene	<0.017 mg/kg	TM218		5.13 M	7.47 M	0.807 M	0.0224 M	1.89 M	5.76 M
Pyrene	<0.015 mg/kg	TM218		3.95 M	5.67 M	0.542 M	0.0178 M	1.46 M	5.09 M
Benz(a)anthracene	<0.014 mg/kg	TM218		2.67 M	3.69 M	0.336 M	<0.014 M	0.955 M	2.75 M
Chrysene	<0.01 mg/kg	TM218		2.82 M	4 M	0.426 M	<0.01 M	1.1 M	3 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		3.76 M	5.56 M	0.669 M	<0.015 M	1.47 M	3.41 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.19 M	2.09 M	0.223 M	<0.014 M	0.551 M	1.39 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		2.42 M	3.38 M	0.306 M	<0.015 M	0.841 M	3.17 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		2.05 M	2.65 M	0.234 M	<0.018 M	0.49 M	2.56 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.374 M	0.55 M	0.0704 M	<0.023 M	0.161 M	0.526 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.81 M	2.46 M	0.293 M	<0.024 M	0.604 M	2.69 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		30	43.2	4.83	<0.118	11.7	35.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-F3-V	3C-F4-V	3C-G1	3C-G1	3C-G3	3C-G3
			Depth (m)	2.80 - 2.80	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580724	18580651	18580597	18580605	18580668	18580676
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		81.2	83.2	96	91.8	91.2	92.1
Acenaphthene-d10 % recovery**	%	TM218		84.2	86.5	101	89.7	95.5	90.1
Phenanthrene-d10 % recovery**	%	TM218		87.1	89.7	103	91.9	96.5	88.7
Chrysene-d12 % recovery**	%	TM218		92.2	84.6	112	85.9	95.7	78.6
Perylene-d12 % recovery**	%	TM218		91.4	82.3	90.1	84.9	84.1	74.2
Naphthalene	<0.009 mg/kg	TM218		0.0155 M	0.0188 M	4.11 M	0.266 #	0.818 M	0.814 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	2.6 M	0.0818 #	0.148 M	0.45 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	0.392 M	<0.008 #	0.0384 M	0.0313 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	3.46 M	0.0673 #	0.197 M	0.142 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	0.0835 M	18.7 M	0.84 #	1.06 M	2.42 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	5.19 M	0.349 #	0.221 M	0.878 M
Fluoranthene	<0.017 mg/kg	TM218		0.0442 M	0.159 M	21.8 M	0.946 #	1.66 M	6.23 M
Pyrene	<0.015 mg/kg	TM218		0.0428 M	0.132 M	15.1 M	0.614 #	1.29 M	4.66 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0337 M	0.0754 M	8.37 M	0.325 #	0.858 M	3.03 M
Chrysene	<0.01 mg/kg	TM218		0.0559 M	0.0936 M	8.49 M	0.393 #	0.885 M	2.68 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0996 M	0.111 M	9.97 M	0.445 #	1.19 M	4.21 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0427 M	0.041 M	3.66 M	0.146 #	0.416 M	1.61 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0438 M	0.0696 M	6.18 M	0.248 #	0.669 M	2.4 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0615 M	0.0631 M	3.4 M	0.277 #	0.502 M	2.12 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	0.765 M	0.0418 #	0.1 M	0.504 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0503 M	0.0555 M	3.81 M	0.174 #	0.475 M	1.77 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.49	0.903	116	5.21	10.5	33.9

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-G3	3C-G1-V	3C-H1	3C-H1	3C-H1	3C-H3
			Depth (m)	1.50 - 1.50	1.70 - 1.70	0.25 - 0.25	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580694	18580616	18580545	18580556	18580564	18580661
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		77.4	75.6	82.7	85	80.6	81.1
Acenaphthene-d10 % recovery**	%	TM218		79.7	83.4	89.3	86.1	85.4	82.3
Phenanthrene-d10 % recovery**	%	TM218		84.8	79.5	87	87.5	88.1	83.7
Chrysene-d12 % recovery**	%	TM218		82.6	71.2	80.3	80.1	95.5	83.1
Perylene-d12 % recovery**	%	TM218		73.2	70.9	76.6	78.6	88.4	74.2
Naphthalene	<0.009 mg/kg	TM218		2.46 M	<0.009 M	0.443 M	0.0261 #	0.0163 #	0.167 #
Acenaphthylene	<0.012 mg/kg	TM218		1.4 M	<0.012 M	0.128 M	<0.012 #	<0.012 #	0.0436 #
Acenaphthene	<0.008 mg/kg	TM218		0.051 M	<0.008 M	0.0247 M	<0.008 #	<0.008 #	<0.008 #
Fluorene	<0.01 mg/kg	TM218		0.378 M	<0.01 M	0.134 M	<0.01 #	<0.01 #	0.0107 #
Phenanthrene	<0.015 mg/kg	TM218		6.92 M	<0.015 M	1.08 M	0.0748 #	0.0662 #	0.239 #
Anthracene	<0.016 mg/kg	TM218		1.89 M	<0.016 M	0.235 M	<0.016 #	<0.016 #	0.0645 #
Fluoranthene	<0.017 mg/kg	TM218		12.9 M	0.0391 M	1.42 M	0.087 #	0.0725 #	0.353 #
Pyrene	<0.015 mg/kg	TM218		9.2 M	0.0326 M	0.981 M	0.0644 #	0.0692 #	0.254 #
Benz(a)anthracene	<0.014 mg/kg	TM218		4.51 M	<0.014 M	0.589 M	0.038 #	0.0428 #	0.137 #
Chrysene	<0.01 mg/kg	TM218		4.73 M	<0.01 M	0.606 M	0.0392 #	0.0465 #	0.149 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		6.06 M	<0.015 M	0.846 M	0.052 #	0.0647 #	0.209 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.09 M	<0.014 M	0.275 M	0.0206 #	0.0266 #	0.0842 #
Benzo(a)pyrene	<0.015 mg/kg	TM218		3.51 M	<0.015 M	0.453 M	0.03 #	0.0331 #	0.119 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.97 M	<0.018 M	0.352 M	0.0273 #	0.0312 #	0.0693 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.587 M	<0.023 M	0.0767 M	<0.023 #	<0.023 #	<0.023 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.25 M	<0.024 M	0.326 M	0.0333 #	0.0359 #	0.106 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		60.9	<0.118	7.97	0.493	0.505	2.01

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-H1-V	3C-I1	3C-I1	3C-I1	3C-I1-V	3C-J1
			Depth (m)	1.25 - 1.25	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	1.70 - 1.70	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580572	18580511	18580519	18580527	18580535	18580836
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.1	89.2	84.3	82.2	80.9	79.6
Acenaphthene-d10 % recovery**	%	TM218		92.1	89.7	76.3	84.9	84.4	91.6
Phenanthrene-d10 % recovery**	%	TM218		88.3	88.1	87.8	84.9	87.6	94.2
Chrysene-d12 % recovery**	%	TM218		84.1	83.2	91.1	78.4	96.7	73.9
Perylene-d12 % recovery**	%	TM218		84.5	82.8	85.5	72.2	97.1	70.2
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.494 M	0.0431 M	0.275 M	<0.009 M	0.643 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.202 M	0.0137 M	0.085 M	<0.012 M	0.182 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0399 M	<0.008 M	0.021 M	<0.008 M	0.0388 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.191 M	0.0137 M	0.0911 M	<0.01 M	0.191 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	1.5 M	0.163 M	0.855 M	<0.015 M	1.58 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.537 M	0.0374 M	0.209 M	<0.016 M	0.375 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	2.79 M	0.226 M	1.4 M	<0.017 M	1.76 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	2.06 M	0.177 M	1.02 M	<0.015 M	1.25 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	1.31 M	0.117 M	0.642 M	<0.014 M	0.68 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	1.27 M	0.118 M	0.541 M	<0.01 M	0.608 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	1.62 M	0.143 M	0.649 M	<0.015 M	0.766 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.7 M	0.0714 M	0.279 M	<0.014 M	0.286 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	0.988 M	0.0822 M	0.459 M	<0.015 M	0.545 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.865 M	0.071 M	0.317 M	<0.018 M	0.529 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.201 M	<0.023 M	0.0583 M	<0.023 M	0.122 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.743 M	0.0574 M	0.321 M	<0.024 M	0.414 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	15.5	1.33	7.22	<0.118	9.97

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J1	3C-J1	3C-J1-V	3C-K1	3C-K1	3C-K1
			Depth (m)	1.00 - 1.00	1.50 - 1.50	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580844	18580495	18580503	18580762	18580813	18580818
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.1	81.5	92.7	91.5	81.4	84.3
Acenaphthene-d10 % recovery**	%	TM218		86.4	87.9	91.6	93.4	80.9	87.2
Phenanthrene-d10 % recovery**	%	TM218		89.8	91.4	92.5	95.3	79.4	92.9
Chrysene-d12 % recovery**	%	TM218		96.4	75.8	88.2	99.3	77.3	98.8
Perylene-d12 % recovery**	%	TM218		91.7	70.8	87.4	92.5	71.5	94.1
Naphthalene	<0.009 mg/kg	TM218		0.787 #	0.0488 M	<0.009 M	0.0614 M	0.0967 M	0.0141 M
Acenaphthylene	<0.012 mg/kg	TM218		0.296 #	<0.012 M	<0.012 M	0.0126 M	0.0516 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0677 #	<0.008 M	<0.008 M	<0.008 M	0.0108 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.293 #	<0.01 M	<0.01 M	0.0125 M	0.0334 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		2.23 #	0.167 M	<0.015 M	0.211 M	0.289 M	0.0709 M
Anthracene	<0.016 mg/kg	TM218		0.621 #	<0.016 M	<0.016 M	0.0234 M	0.0731 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		2.95 #	0.0927 M	<0.017 M	0.141 M	0.45 M	0.146 M
Pyrene	<0.015 mg/kg	TM218		2.2 #	0.063 M	<0.015 M	0.109 M	0.335 M	0.115 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.34 #	0.0436 M	<0.014 M	0.0809 M	0.243 M	0.064 M
Chrysene	<0.01 mg/kg	TM218		1.36 #	0.0735 M	<0.01 M	0.112 M	0.276 M	0.086 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.9 #	0.0638 M	<0.015 M	0.116 M	0.33 M	0.132 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.807 #	0.0202 M	<0.014 M	0.0419 M	0.126 M	0.0433 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.21 #	0.0357 M	<0.015 M	0.0631 M	0.212 M	0.0717 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.904 #	0.0253 M	<0.018 M	0.0528 M	0.128 M	0.0601 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.179 #	<0.023 M	<0.023 M	<0.023 M	0.0372 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.694 #	<0.024 M	<0.024 M	0.05 M	0.149 M	0.0521 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		17.8	0.634	<0.118	1.09	2.84	0.854

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K1-V	3C-L7	3C-L7	3C-L7-V	3C-M7	3C-M7
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580829	18580791	18580797	18580806	18580757	18580770
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.2	78.6	79.3	85	76.2	81.5
Acenaphthene-d10 % recovery**	%	TM218		85.8	85.1	87.8	90.9	79.4	87.9
Phenanthrene-d10 % recovery**	%	TM218		89.8	95.8	91	89.6	79.6	90.1
Chrysene-d12 % recovery**	%	TM218		84	97.8	83.7	82.1	74.1	85.7
Perylene-d12 % recovery**	%	TM218		86.6	89.3	72.7	79.4	72.2	73.8
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	7.63 M	3.69 M	<0.009 M	0.514 M	6.02 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	4.53 M	0.787 M	<0.012 M	0.406 M	1.98 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.416 M	0.145 M	<0.008 M	0.049 M	0.236 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	5.18 M	1.06 M	<0.01 M	0.358 M	1.66 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	28.4 M	5.39 M	0.0366 M	2.33 M	6.46 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	12.7 M	2 M	<0.016 M	0.809 M	1.93 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	54.5 M	7.59 M	0.0549 M	4.64 M	7.45 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	39.5 M	5.68 M	0.0424 M	3.33 M	5.33 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	18.5 M	3.25 M	0.0218 M	2.05 M	3.1 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	19.1 M	3.21 M	0.0363 M	1.99 M	3.15 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	21.3 M	3.9 M	0.0426 M	2.84 M	3.99 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	7.67 M	1.42 M	<0.014 M	0.942 M	1.35 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	13.2 M	2.61 M	<0.015 M	1.81 M	2.4 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	10.3 M	1.79 M	<0.018 M	1.36 M	1.68 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	2.76 M	0.339 M	<0.023 M	0.297 M	0.331 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	8.77 M	1.58 M	<0.024 M	1.19 M	1.46 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	254	44.4	0.235	24.9	48.5

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-M7	3C-M8	3C-M8	3C-M8	3C-ML1	3C-ML1
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.60 - 0.60	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580779	18580734	18580742	18580746	18580482	18580582
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.4	77	93.7	92.5	82.6	91.2
Acenaphthene-d10 % recovery**	%	TM218		93.9	79.8	93.9	92.7	88.6	96.6
Phenanthrene-d10 % recovery**	%	TM218		94.9	83.4	97.1	92.4	88.1	95.4
Chrysene-d12 % recovery**	%	TM218		89.8	78.6	105	87.7	80.3	90.6
Perylene-d12 % recovery**	%	TM218		81.5	74.9	103	90.2	75.7	79.6
Naphthalene	<0.009 mg/kg	TM218		1.18 M	4.62 M	2.84 M	4 M	0.236 M	0.0949 M
Acenaphthylene	<0.012 mg/kg	TM218		0.471 M	2.6 M	3.17 M	1.27 M	0.0929 M	0.0293 M
Acenaphthene	<0.008 mg/kg	TM218		0.082 M	0.196 M	0.454 M	0.167 M	0.0179 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.472 M	1.32 M	3.26 M	0.924 M	0.108 M	0.0314 M
Phenanthrene	<0.015 mg/kg	TM218		3.71 M	25.3 M	31.6 M	4.85 M	0.821 M	0.294 M
Anthracene	<0.016 mg/kg	TM218		0.953 M	6.83 M	8.7 M	1.76 M	0.261 M	0.0518 M
Fluoranthene	<0.017 mg/kg	TM218		4.58 M	28.4 M	51.4 M	10.7 M	1.11 M	0.4 M
Pyrene	<0.015 mg/kg	TM218		3.27 M	21.2 M	37.8 M	8.09 M	0.774 M	0.293 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.9 M	12.7 M	19.1 M	4.62 M	0.415 M	0.181 M
Chrysene	<0.01 mg/kg	TM218		1.93 M	11.9 M	16.6 M	4.73 M	0.451 M	0.2 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.42 M	16 M	25.8 M	6.57 M	0.494 M	0.227 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.842 M	6.02 M	9.66 M	2.41 M	0.178 M	0.0698 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.4 M	10.2 M	17.1 M	4.41 M	0.36 M	0.121 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.05 M	5.91 M	14.3 M	4.13 M	0.264 M	0.0791 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.2 M	1.68 M	2.63 M	0.89 M	0.0507 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.01 M	6.47 M	11.5 M	3.57 M	0.297 M	0.0863 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		25.5	161	256	63	5.93	2.16

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-ML1-V	3C-M7-V	3C-M8-V			
			Depth (m)	1.60 - 1.60	3.30 - 3.30	3.50 - 3.50			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	22/10/2018	22/10/2018	22/10/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	23/10/2018	23/10/2018	23/10/2018			
			SDG Ref	181023-13	181023-13	181023-13			
			Lab Sample No.(s)	18580685	18580785	18580753			
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.7	80	93.2			
Acenaphthene-d10 % recovery**	%	TM218		89.3	80.9	96.1			
Phenanthrene-d10 % recovery**	%	TM218		92.5	80.3	97.7			
Chrysene-d12 % recovery**	%	TM218		83.5	75	103			
Perylene-d12 % recovery**	%	TM218		85.2	76.9	99.6			
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	0.0426 M			
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	0.0163 M			
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M			
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M			
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	0.0514 M			
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	<0.016 M			
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	<0.017 M	0.106 M			
Pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	0.0864 M			
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	0.0643 M			
Chrysene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.0515 M			
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	0.0987 M			
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	0.0303 M			
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	0.0592 M			
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	0.0512 M			
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M			
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	0.0377 M			
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	<0.118	0.695			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-F3	3C-F3	3C-F3	3C-F4	3C-F4	3C-F4
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.10 - 1.10	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580702	18580709	18580717	18580624	18580633	18580643
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		83.1	59.5	102	116	30	72.6
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 #	<0.2 M	<0.1 M	<0.2 #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.01	<0.02	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.01	0.0454	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.01	0.0216	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.01	<0.02	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.52	<0.1	<0.1	<0.1	4.77	3.06
Aliphatics >C16-C21	<0.1 mg/kg	TM173		8.74	6.85	<0.1	0.563	16.7	15.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		44.6	37	5.07	1.75	90.8	56.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		7.66	3.24	<0.1	<0.1	13.1	8.84
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		62.5	47.1	5.07	2.32	125	83.3
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.01	<0.02	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.01	<0.02	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.01	<0.02	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.01	<0.02	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		4.09	4.2	<0.1	<0.1	2.26	2.5
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		36	34.9	0.426	<0.1	12.2	16.5
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		124	123	9.2	12	46.5	53.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		32.6	33.4	3.06	0.982	4.48	17.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		11.1	11.8	3.52	<0.1	<0.1	6.32
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		197	196	12.7	12.9	65.4	89.8
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		259	243	17.8	15.3	191	173

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-F3-V	3C-F4-V	3C-G1	3C-G1	3C-G3	3C-G3
			Depth (m)	2.80 - 2.80	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580724	18580651	18580597	18580605	18580668	18580676
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		99.1	105	82.9	91	95	50.8
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M	<0.2 M	<0.2 #	<0.2 M	<0.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	2.3	0.525	2.19	5.28
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1	7.65	1.18	11.4	19.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		0.288	4.13	43.4	1.83	27.9	82.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	14.3	<0.1	5.8	11.3
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		0.288	4.13	67.7	3.53	47.3	119
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	4.03	<0.1	3.54	5.34
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	1.29	18.2	<0.1	18.8	22.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		2.29	24.1	59.3	0.121	63.7	73.4
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		0.248	1.98	26.4	<0.1	14.3	18.3
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	10.9	<0.1	3.71	5.14
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		2.53	27.4	108	0.121	100	120
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		2.82	31.5	176	3.66	148	238

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-G3	3C-G1-V	3C-H1	3C-H1	3C-H1	3C-H3
			Depth (m)	1.50 - 1.50	1.70 - 1.70	0.25 - 0.25	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580694	18580616	18580545	18580556	18580564	18580661
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		73	111	84.7	96.2	122	83
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.911 M	<0.2 M	<0.2 M	<0.2 #	<0.2 #	<0.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0684	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.194	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.147	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.174	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.98	<0.1	0.766	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		29.4	<0.1	2.79	<0.1	<0.1	1.98
Aliphatics >C21-C35	<0.1 mg/kg	TM173		114	1.1	10.3	3.98	5.34	19
Aliphatics >C35-C44	<0.1 mg/kg	TM173		16.8	0.529	3.32	0.31	<0.1	0.654
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		167	1.63	17.2	4.29	5.34	21.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.0456	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.0661	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.098	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.116	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		6.91	1.59	0.564	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		36.3	<0.1	2.97	0.535	1.19	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		93.7	3.24	6.78	<0.1	15	4.35
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		29.6	0.191	0.588	<0.1	1.39	2.03
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		12.3	<0.1	<0.1	<0.1	<0.1	3.06
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		167	5.02	10.9	0.535	17.6	6.38
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		334	6.65	28.1	4.82	23	28

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-H1-V	3C-I1	3C-I1	3C-I1	3C-I1-V	3C-J1
			Depth (m)	1.25 - 1.25	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	1.70 - 1.70	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580572	18580511	18580519	18580527	18580535	18580836
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		128	87.2	81	82.8	101	81.5
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	2.26	1.27	1.69	<0.1	1.58
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	5.78	2.28	5.14	<0.1	5.54
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1.05	33	6.31	33.9	<0.1	28.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	11.7	1.04	10.5	<0.1	8.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		1.05	52.8	10.9	51.2	<0.1	44.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	2.64	0.581	2.3	<0.1	1.59
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	14.1	1.97	10.8	<0.1	6.68
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		9.76	48.4	5.09	38.6	<0.1	21.4
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		0.511	14.9	0.4	12.3	<0.1	6.27
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	4.75	<0.1	4.15	<0.1	2.08
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		10.3	80.1	8.04	64.1	<0.1	36
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		11.3	133	18.9	115	<0.1	80

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J1	3C-J1	3C-J1-V	3C-K1	3C-K1	3C-K1
			Depth (m)	1.00 - 1.00	1.50 - 1.50	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580844	18580495	18580503	18580762	18580813	18580818
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		80.6	82.5	139	79.4	70.4	90.3
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 #	<0.2 M	<0.2 #	<0.1 M	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.472	<0.1	0.36	<0.1	<0.1	1.27
Aliphatics >C16-C21	<0.1 mg/kg	TM173		3.22	<0.1	<0.1	0.764	<0.1	10.8
Aliphatics >C21-C35	<0.1 mg/kg	TM173		23.8	4.46	0.325	3.22	9.54	22.8
Aliphatics >C35-C44	<0.1 mg/kg	TM173		8.19	<0.1	0.188	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		35.6	4.46	0.873	3.99	9.54	34.9
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.42	0.713	<0.1	<0.1	0.837	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		11.2	1.12	<0.1	2.27	2.81	3.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		38.6	5.13	<0.1	7.11	10.9	43.9
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		16.6	0.396	<0.1	1.2	3.04	7.34
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		8.5	2.78	1.56	<0.1	1.13	2.18
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		68.8	7.37	<0.1	10.6	17.5	54.4
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		104	11.8	0.873	14.6	27.1	89.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K1-V	3C-L7	3C-L7	3C-L7-V	3C-M7	3C-M7
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580829	18580791	18580797	18580806	18580757	18580770
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		108	90.7	42.1 ♦	92.4	84.5	35.4
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	0.819 M	0.147 ♦#	<0.2 M	<0.2 M	0.703 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	0.0278	<0.01 ♦	<0.02	<0.02	0.0278
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.071	0.0353 ♦	<0.02	<0.02	0.132
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.0722	0.0217 ♦	<0.02	<0.02	0.0999
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	0.354	0.0365 ♦	<0.02	<0.02	0.21
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	9.69	6.6	2.88	3.72	15.8
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	33	68.8	0.982	20	257
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	75.4	77.8	10.6	50.7	210
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	17.8	18.8	<0.1	13.4	33.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	136	172	14.5	87.8	517
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.01 ♦	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.01 ♦	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.0477	0.0148 ♦	<0.02	<0.02	0.0666
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	0.236	0.0239 ♦	<0.02	<0.02	0.14
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	45.4	9.26	0.666	17.9	21.2
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	395	58.3	2.89	145	144
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		2.61	695	103	48.8	351	186
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	150	28.7	6.51	89	43.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		2.35	35.9	9.11	1.6	28.9	16.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		2.61	1290	199	58.9	602	395
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		2.61	1420	371	73.4	690	912

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-M7	3C-M8	3C-M8	3C-M8	3C-ML1	3C-ML1
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.60 - 0.60	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580779	18580734	18580742	18580746	18580482	18580582
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		51.6	81	89.7	64.1	60	77.2
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.508 #	<0.2 M	<0.2 M	0.907 #	<0.2 #	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0244	<0.02	<0.02	0.0217	<0.02	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0998	0.0259	<0.02	0.0935	<0.02	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0789	0.0218	<0.02	0.0958	<0.02	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.132	0.0539	<0.02	0.368	<0.02	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.38	2.49	3.16	6.02	0.817	1.51
Aliphatics >C16-C21	<0.1 mg/kg	TM173		25.2	14.1	14.8	21.1	1.91	1.51
Aliphatics >C21-C35	<0.1 mg/kg	TM173		57.5	39.5	39.3	71.4	12.4	5.97
Aliphatics >C35-C44	<0.1 mg/kg	TM173		17.9	11.6	10.5	21.8	2.96	0.959
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		107	67.8	67.7	120	18.1	9.95
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0534	<0.02	<0.02	0.0638	<0.02	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0882	0.0363	<0.02	0.245	<0.02	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		14.5	12.5	7.81	9.43	1.8	1.07
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		63.3	104	74.8	57	7.49	3.68
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		161	289	232	165	23.3	9.48
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		53.4	78.5	64.3	49.6	7.42	1.99
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		19.3	21.6	17.8	14.3	2.47	0.438
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		292	484	378	281	40	16.2
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		399	551	446	402	58	26.2

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-ML1-V	3C-M7-V	3C-M8-V			
			Depth (m)	1.60 - 1.60	3.30 - 3.30	3.50 - 3.50			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	22/10/2018	22/10/2018	22/10/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	23/10/2018	23/10/2018	23/10/2018			
			SDG Ref	181023-13	181023-13	181023-13			
			Lab Sample No.(s)	18580685	18580785	18580753			
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		95	95	107			
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.2 M	<0.2 M			
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02			
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02			
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02			
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02			
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1			
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1			
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	0.754	<0.1			
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1			
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	0.754	<0.1			
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02			
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02			
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02			
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02			
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1			
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1			
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		1.37	2.9	5.53			
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	0.731	0.705			
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1			
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		1.37	3.63	6.23			
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1.37	4.38	6.23			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-F3	3C-F3	3C-F3	3C-F4	3C-F4	3C-F4
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.10 - 1.10	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580702	18580709	18580717	18580624	18580633	18580643
			AGS Reference						
Dibromofluoromethane**	%	TM116		119	107	116	124	119	114
Toluene-d8**	%	TM116		101	95.8	102	104	91.4	103
4-Bromofluorobenzene**	%	TM116		87.5	74.4	101	91.5	74.9	85.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.2 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.18 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.14 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.08 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.2 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.2 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.174 M	<0.13 M	<0.13 M	<0.26 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.8	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-F3-V	3C-F4-V	3C-G1	3C-G1	3C-G3	3C-G3
			Depth (m)	2.80 - 2.80	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580724	18580651	18580597	18580605	18580668	18580676
			AGS Reference						
Dibromofluoromethane**	%	TM116		118	126	107	121	100	108
Toluene-d8**	%	TM116		103	104	96	101	95	89.8
4-Bromofluorobenzene**	%	TM116		91.3	88.6	83.8	95	98.3	73.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.2 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.18 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.14 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.08 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.2 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.2 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	0.426 M	<0.13 M	0.355 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.8	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-G3	3C-G1-V	3C-H1	3C-H1	3C-H1	3C-H3
			Depth (m)	1.50 - 1.50	1.70 - 1.70	0.25 - 0.25	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580694	18580616	18580545	18580556	18580564	18580661
			AGS Reference						
Dibromofluoromethane**	%	TM116		100	112	109	113	112	112
Toluene-d8**	%	TM116		93.9	101	99.4	101	99.6	96.3
4-Bromofluorobenzene**	%	TM116		82.2	101	87.4	98.2	94	93.1
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 #
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 #	<0.09 #	<0.09 #
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 #	<0.07 #	<0.07 #
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 #	<0.04 #	<0.04 #
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 #	<0.1 #	<0.1 #
Naphthalene	<0.013 mg/kg	TM116		0.586 M	<0.13 M	<0.13 M	<0.13 #	<0.13 #	<0.13 #
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-H1-V	3C-I1	3C-I1	3C-I1	3C-I1-V	3C-J1
			Depth (m)	1.25 - 1.25	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	1.70 - 1.70	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580572	18580511	18580519	18580527	18580535	18580836
			AGS Reference						
Dibromofluoromethane**	%	TM116		112	107	117	108	111	113
Toluene-d8**	%	TM116		99.9	96.9	96.7	99.6	102	97.3
4-Bromofluorobenzene**	%	TM116		96.2	87.7	86.2	90.5	102	85.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	0.194 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-J1	3C-J1	3C-J1-V	3C-K1	3C-K1	3C-K1
			Depth (m)	1.00 - 1.00	1.50 - 1.50	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580844	18580495	18580503	18580762	18580813	18580818
			AGS Reference						
Dibromofluoromethane**	%	TM116		118	126	112	123	122	134
Toluene-d8**	%	TM116		95.5	94.9	102	101	104	96.7
4-Bromofluorobenzene**	%	TM116		81.6	82.7	102	77.7	79.8	80.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 #	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 #	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 #	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.154 #	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K1-V	3C-L7	3C-L7	3C-L7-V	3C-M7	3C-M7
			Depth (m)	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580829	18580791	18580797	18580806	18580757	18580770
			AGS Reference						
Dibromofluoromethane**	%	TM116		113	106	93.9	108	103	94.9
Toluene-d8**	%	TM116		101	99.6	96.6	101	99.8	94
4-Bromofluorobenzene**	%	TM116		101	91.3	85.3	99.7	91.6	76.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	8.37 M	1.37 M	<0.13 M	0.567 M	1.7 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-M7	3C-M8	3C-M8	3C-M8	3C-ML1	3C-ML1
			Depth (m)	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.60 - 0.60	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018	22/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			SDG Ref	181023-13	181023-13	181023-13	181023-13	181023-13	181023-13
			Lab Sample No.(s)	18580779	18580734	18580742	18580746	18580482	18580582
			AGS Reference						
Dibromofluoromethane**	%	TM116		91.9	108	107	96.3	117	117
Toluene-d8**	%	TM116		93.1	100	97.2	92.4	102	102
4-Bromofluorobenzene**	%	TM116		75.5	80.9	77.6	80.1	75	79.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.87 M	1.01 M	0.583 M	7.55 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-ML1-V	3C-M7-V	3C-M8-V			
			Depth (m)	1.60 - 1.60	3.30 - 3.30	3.50 - 3.50			
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
			Date Sampled	22/10/2018	22/10/2018	22/10/2018			
			Sample Time	00:00	00:00	00:00			
			Date Received	23/10/2018	23/10/2018	23/10/2018			
			SDG Ref	181023-13	181023-13	181023-13			
			Lab Sample No.(s)	18580685	18580785	18580753			
			AGS Reference						
Dibromofluoromethane**	%	TM116		125	112	109			
Toluene-d8**	%	TM116		103	100	102			
4-Bromofluorobenzene**	%	TM116		92	99.4	100			
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M			
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M			
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M			
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M			
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #			
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M			
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M			
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4			

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-F3 0.50 - 0.50 SOLID 22/10/2018 00:00:00 23/10/2018 17:16:57 181023-13 18580702 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-F3 2.00 - 2.00 SOLID 22/10/2018 00:00:00 23/10/2018 14:13:08 181023-13 18580717 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-F4 0.50 - 0.50 SOLID 22/10/2018 00:00:00 23/10/2018 15:05:11 181023-13 18580624 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-F4 1.50 - 1.50 SOLID 22/10/2018 00:00:00 23/10/2018 15:08:56 181023-13 18580643 TM048	05/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-G1 0.50 - 0.50 SOLID 22/10/2018 00:00:00 23/10/2018 13:11:22 181023-13 18580597 TM048	05/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-G3 0.50 - 0.50 SOLID 22/10/2018 00:00:00 23/10/2018 17:12:32 181023-13 18580668 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181023-13 **Client Reference:** **Report Number:** 480663
Location: Llanwern **Order Number:** LLA494 **Superseded Report:** 480662

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-G3 1.50 - 1.50 SOLID 22/10/2018 00:00:00 23/10/2018 17:15:02 181023-13 18580694 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-H1 0.50 - 0.50 SOLID 22/10/2018 00:00:00 23/10/2018 15:02:29 181023-13 18580556 TM048	05/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-H3 0.50 - 0.50 SOLID 22/10/2018 00:00:00 23/10/2018 16:52:01 181023-13 18580661 TM048	05/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I1 0.50 - 0.50 SOLID 22/10/2018 00:00:00 23/10/2018 17:57:17 181023-13 18580511 TM048	05/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-I1 1.50 - 1.50 SOLID 22/10/2018 00:00:00 23/10/2018 17:55:13 181023-13 18580527 TM048	05/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-J1 1.00 - 1.00 SOLID 22/10/2018 00:00:00 23/10/2018 14:49:28 181023-13 18580844 TM048	05/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181023-13 **Client Reference:** **Report Number:** 480663
Location: Llanwern **Order Number:** LLA494 **Superseded Report:** 480662

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-K1 0.50 - 0.50 SOLID 22/10/2018 00:00:00 23/10/2018 19:44:28 181023-13 18580762 TM048	05/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-K1 1.50 - 1.50 SOLID 22/10/2018 00:00:00 23/10/2018 19:47:17 181023-13 18580818 TM048	05/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-L7 1.00 - 1.00 SOLID 22/10/2018 00:00:00 23/10/2018 16:30:07 181023-13 18580797 TM048	05/11/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-M7 0.50 - 0.50 SOLID 22/10/2018 00:00:00 23/10/2018 14:10:54 181023-13 18580757 TM048	05/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-M7 2.00 - 2.00 SOLID 22/10/2018 00:00:00 23/10/2018 16:59:24 181023-13 18580779 TM048	05/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-M8 1.00 - 1.00 SOLID 22/10/2018 00:00:00 23/10/2018 14:33:24 181023-13 18580742 TM048	05/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**	**Report Number:** 480663
Location:	Llanwern	**Order Number:** LLA494	**Superseded Report:** 480662

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-ML1 0.60 - 0.60 SOLID 22/10/2018 00:00:00 23/10/2018 16:48:38 181023-13 18580482 TM048	05/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-L7 1.00 - 1.00 SOLID 22/10/2018 00:00:00 23/10/2018 16:30:33 181023-13 18580797 TM304	None (#)	N/C	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580482
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-ML1
Depth (m)	0.60 - 0.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00486	<0.0005	0.0486	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0025	<0.0003	0.025	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00142	<0.001	0.0142	<0.01	-	-	-
Vanadium	0.0695	<0.001	0.695	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000401	<0.00001	0.000401	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000646	<0.000005	0.0000646	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Fluoranthene by GCMS	0.000151	<0.000005	0.00151	<0.00005	-	-	-
Anthracene by GCMS	0.0000365	<0.000005	0.000365	<0.00005	-	-	-
Phenanthrene by GCMS	0.000143	<0.000005	0.00143	<0.00005	-	-	-
Fluorene by GCMS	0.00002	<0.000005	0.0002	<0.00005	-	-	-
Chrysene by GCMS	0.0000497	<0.000005	0.000497	<0.00005	-	-	-
Pyrene by GCMS	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000435	<0.000005	0.000435	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000437	<0.000005	0.000437	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000263	<0.000005	0.000263	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000219	<0.000002	0.000219	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000289	<0.000005	0.000289	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000158	<0.000005	0.000158	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000746	<0.000082	0.00746	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.32
Conductivity (µS/cm)	204.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

12/11/2018 13:23:42

13:23:16 12/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580482
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-ML1
Depth (m)	0.60 - 0.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.32
Conductivity (µS/cm)	204.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580495
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-J1
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00133	<0.0005	0.0133	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00117	<0.0003	0.0117	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00131	<0.001	0.0131	<0.01	-	-	-
Vanadium	0.00343	<0.001	0.0343	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000144	<0.00001	0.000144	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000328	<0.000005	0.000328	<0.00005	-	-	-
Anthracene by GCMS	0.00000801	<0.000005	0.0000801	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000364	<0.000005	0.000364	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000173	<0.000005	0.000173	<0.00005	-	-	-
Pyrene by GCMS	0.0000235	<0.000005	0.000235	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000181	<0.000005	0.000181	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000678	<0.000005	0.0000678	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000596	<0.000002	0.0000596	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000587	<0.000005	0.0000587	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000181	<0.000082	0.00181	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.45
Conductivity (µS/cm)	131.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580495
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-J1
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.45
Conductivity (µS/cm)	131.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.1
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580511
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-I1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00608	<0.0005	0.0608	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00288	<0.0003	0.0288	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000508	<0.0004	0.00508	<0.004	-	-	-
Selenium	0.00114	<0.001	0.0114	<0.01	-	-	-
Vanadium	0.0739	<0.001	0.739	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	0.000423	<0.00025	0.00423	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	0.000428	<0.00025	0.00428	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	0.000265	<0.00025	0.00265	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.51
Conductivity (µS/cm)	201.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.1
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580511
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-I1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	10.51
Conductivity (µS/cm)	201.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580519
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-I1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00365	<0.0005	0.0365	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00258	<0.0003	0.0258	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00131	<0.001	0.0131	<0.01	-	-	-
Vanadium	0.0165	<0.001	0.165	<0.01	-	-	-
Zinc	0.00335	<0.001	0.0335	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000216	<0.00005	0.00216	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000203	<0.00005	0.00203	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000159	<0.00005	0.00159	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000741	<0.00005	0.000741	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000698	<0.00005	0.000698	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.0000536	<0.00002	0.000536	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.44
Conductivity (µS/cm)	144.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580519
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-I1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.1	<0.1	<1	<1	-	-	-
Aromatics >EC16-EC21	<0.1	<0.1	<1	<1	-	-	-
Aromatics >EC21-EC35	<0.1	<0.1	<1	<1	-	-	-
Total Aromatics >EC12-EC35	<0.1	<0.1	<1	<1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.44
Conductivity (µS/cm)	144.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580527
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-I1
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.385	<0.2	3.85	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00699	<0.0005	0.0699	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00559	<0.0003	0.0559	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0101	<0.003	0.101	<0.03	-	-	-
Nickel	0.00131	<0.0004	0.0131	<0.004	-	-	-
Selenium	0.00202	<0.001	0.0202	<0.01	-	-	-
Vanadium	0.00697	<0.001	0.0697	<0.01	-	-	-
Zinc	0.00312	<0.001	0.0312	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	0.0011	<0.00025	0.011	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	0.000286	<0.00025	0.00286	<0.0025	-	-	-
Phenanthrene by GCMS	0.000445	<0.00025	0.00445	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	0.000884	<0.00025	0.00884	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.48
Conductivity (µS/cm)	231.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580527
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-I1
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.48
Conductivity (µS/cm)	231.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580545
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-H1
Depth (m)	0.25 - 0.25

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.013	<0.0005	0.13	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00194	<0.0003	0.0194	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0016	<0.001	0.016	<0.01	-	-	-
Vanadium	0.0704	<0.001	0.704	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000248	<0.00001	0.000248	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000975	<0.000005	0.0000975	<0.00005	-	-	-
Fluoranthene by GCMS	0.000197	<0.000005	0.00197	<0.00005	-	-	-
Anthracene by GCMS	0.0000324	<0.000005	0.000324	<0.00005	-	-	-
Phenanthrene by GCMS	0.000139	<0.000005	0.00139	<0.00005	-	-	-
Fluorene by GCMS	0.0000126	<0.000005	0.000126	<0.00005	-	-	-
Chrysene by GCMS	0.000073	<0.000005	0.00073	<0.00005	-	-	-
Pyrene by GCMS	0.000139	<0.000005	0.00139	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000049	<0.000005	0.00049	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000575	<0.000005	0.000575	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000342	<0.000005	0.000342	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000332	<0.000002	0.000332	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000535	<0.000005	0.0000535	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000415	<0.000005	0.000415	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000196	<0.000005	0.000196	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000867	<0.000082	0.00867	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.89
Conductivity (µS/cm)	141.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.05
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.7
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580545
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-H1
Depth (m)	0.25 - 0.25

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.89
Conductivity (µS/cm)	141.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.2
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580556
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-H1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.791	<0.2	7.91	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0107	<0.0005	0.107	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00173	<0.0003	0.0173	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000468	<0.0004	0.00468	<0.004	-	-	-
Selenium	0.00198	<0.001	0.0198	<0.01	-	-	-
Vanadium	0.0422	<0.001	0.422	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000135	<0.00001	0.000135	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000443	<0.000005	0.000443	<0.00005	-	-	-
Anthracene by GCMS	0.00000812	<0.000005	0.0000812	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000406	<0.000005	0.000406	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Pyrene by GCMS	0.0000347	<0.000005	0.000347	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000903	<0.000005	0.0000903	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000765	<0.000002	0.0000765	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000532	<0.000005	0.0000532	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00023	<0.000082	0.0023	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.69
Conductivity (µS/cm)	110.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.2
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580556
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-H1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.69
Conductivity (µS/cm)	110.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580564
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-H1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.646	<0.2	6.46	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00241	<0.0005	0.0241	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00289	<0.0003	0.0289	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.367	<0.003	3.67	<0.03	-	-	-
Nickel	0.00135	<0.0004	0.0135	<0.004	-	-	-
Selenium	0.00186	<0.001	0.0186	<0.01	-	-	-
Vanadium	0.00114	<0.001	0.0114	<0.01	-	-	-
Zinc	0.00968	<0.001	0.0968	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000986	<0.000005	0.0000986	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000121	<0.000005	0.000121	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000826	<0.000005	0.0000826	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.18
Conductivity (µS/cm)	456.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580564
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-H1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.18
Conductivity (µS/cm)	456.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580582
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-ML1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00177	<0.0005	0.0177	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00119	<0.0003	0.0119	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000414	<0.0004	0.00414	<0.004	-	-	-
Selenium	0.00109	<0.001	0.0109	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000245	<0.00001	0.000245	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000195	<0.000005	0.000195	<0.00005	-	-	-
Anthracene by GCMS	0.00000549	<0.000005	0.0000549	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000274	<0.000005	0.000274	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000311	<0.000002	0.0000311	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000951	<0.000082	0.000951	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	8.38
Conductivity (µS/cm)	138.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580582
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-ML1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	8.38
Conductivity (µS/cm)	138.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580597
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-G1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000539	<0.00001	0.000539	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0031	<0.0005	0.031	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00114	<0.001	0.0114	<0.01	-	-	-
Copper	0.00722	<0.0003	0.0722	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00106	<0.0004	0.0106	<0.004	-	-	-
Selenium	0.00151	<0.001	0.0151	<0.01	-	-	-
Vanadium	0.123	<0.001	1.23	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000899	<0.00001	0.000899	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Fluoranthene by GCMS	0.000173	<0.000005	0.00173	<0.00005	-	-	-
Anthracene by GCMS	0.0000367	<0.000005	0.000367	<0.00005	-	-	-
Phenanthrene by GCMS	0.000129	<0.000005	0.00129	<0.00005	-	-	-
Fluorene by GCMS	0.0000201	<0.000005	0.000201	<0.00005	-	-	-
Chrysene by GCMS	0.0000409	<0.000005	0.000409	<0.00005	-	-	-
Pyrene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000224	<0.000005	0.000224	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000481	<0.000005	0.000481	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000279	<0.000005	0.000279	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000348	<0.000002	0.000348	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000796	<0.000082	0.00796	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	10.53
Conductivity (µS/cm)	230.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.46
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.2
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580597
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-G1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	10.53
Conductivity (µS/cm)	230.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580605
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-G1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0086	<0.0005	0.086	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000542	<0.0003	0.00542	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0148	<0.001	0.148	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000249	<0.000005	0.000249	<0.00005	-	-	-
Anthracene by GCMS	0.00000557	<0.000005	0.0000557	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000245	<0.000005	0.000245	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	7.78
Conductivity (µS/cm)	95.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.81
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.9
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580605
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-G1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	7.78
Conductivity (µS/cm)	95.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580624
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-F4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00108	<0.0005	0.0108	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00307	<0.0003	0.0307	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000618	<0.0004	0.00618	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00531	<0.001	0.0531	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.15
Conductivity (µS/cm)	139.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580624
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-F4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	8.15
Conductivity (µS/cm)	139.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580633
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-F4
Depth (m)	1.10 - 1.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000195	<0.00001	0.000195	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00841	<0.0005	0.0841	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00133	<0.001	0.0133	<0.01	-	-	-
Copper	0.00897	<0.0003	0.0897	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00133	<0.0004	0.0133	<0.004	-	-	-
Selenium	0.00333	<0.001	0.0333	<0.01	-	-	-
Vanadium	0.105	<0.001	1.05	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000309	<0.00005	0.00309	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000225	<0.00005	0.00225	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000156	<0.00005	0.00156	<0.0005	-	-	-
Pyrene by GCMS	0.000224	<0.00005	0.00224	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000151	<0.00005	0.00151	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000236	<0.00005	0.00236	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000126	<0.00005	0.00126	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000176	<0.00002	0.00176	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000749	<0.00005	0.000749	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000102	<0.00005	0.00102	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00178	<0.00082	0.0178	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.49
Conductivity (µS/cm)	208.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580633
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-F4
Depth (m)	1.10 - 1.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.037	<0.01	0.37	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.49
Conductivity (µS/cm)	208.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580643
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-F4
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.453	<0.2	4.53	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00522	<0.001	0.0522	<0.01	-	-	-
Copper	0.0138	<0.0003	0.138	<0.003	-	-	-
Lead	0.00474	<0.0002	0.0474	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00154	<0.0004	0.0154	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00626	<0.001	0.0626	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	0.00238	<0.00025	0.0238	<0.0025	-	-	-
Anthracene by GCMS	0.000382	<0.00025	0.00382	<0.0025	-	-	-
Phenanthrene by GCMS	0.0112	<0.00025	0.112	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	0.00184	<0.00025	0.0184	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	0.0158	<0.0041	0.158	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	12.10
Conductivity (µS/cm)	7,080.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580643
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-F4
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	12.10
Conductivity (µS/cm)	7,080.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580668
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-G3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00197	<0.0005	0.0197	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0042	<0.0003	0.042	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00556	<0.003	0.0556	<0.03	-	-	-
Nickel	0.00115	<0.0004	0.0115	<0.004	-	-	-
Selenium	0.00147	<0.001	0.0147	<0.01	-	-	-
Vanadium	0.00427	<0.001	0.0427	<0.01	-	-	-
Zinc	0.00109	<0.001	0.0109	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000024	<0.00001	0.00024	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000642	<0.000005	0.0000642	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000632	<0.000005	0.000632	<0.00005	-	-	-
Anthracene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000603	<0.000005	0.000603	<0.00005	-	-	-
Fluorene by GCMS	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Chrysene by GCMS	0.0000216	<0.000005	0.000216	<0.00005	-	-	-
Pyrene by GCMS	0.0000464	<0.000005	0.000464	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000233	<0.000005	0.000233	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000224	<0.000005	0.000224	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000114	<0.000002	0.000114	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000179	<0.000005	0.000179	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000088	<0.000005	0.000088	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000344	<0.000082	0.00344	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.15
Conductivity (µS/cm)	291.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580668
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-G3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.15
Conductivity (µS/cm)	291.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580676
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-G3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.397	<0.2	3.97	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00437	<0.0005	0.0437	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00331	<0.001	0.0331	<0.01	-	-	-
Copper	0.00555	<0.0003	0.0555	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000579	<0.0004	0.00579	<0.004	-	-	-
Selenium	0.0021	<0.001	0.021	<0.01	-	-	-
Vanadium	0.188	<0.001	1.88	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000233	<0.00001	0.000233	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000352	<0.000005	0.000352	<0.00005	-	-	-
Anthracene by GCMS	0.00000855	<0.000005	0.0000855	<0.00005	-	-	-
Phenanthrene by GCMS	0.000025	<0.000005	0.00025	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000027	<0.000005	0.00027	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000191	<0.000005	0.000191	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000011	<0.000002	0.00011	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000159	<0.000082	0.00159	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	9.83
Conductivity (µS/cm)	172.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580676
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-G3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	26-Oct-2018
pH (pH Units)	9.83
Conductivity (µS/cm)	172.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580694
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-G3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0125	<0.001	0.125	<0.01	-	-	-
Copper	0.00971	<0.0003	0.0971	<0.003	-	-	-
Lead	0.000228	<0.0002	0.00228	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000751	<0.0004	0.00751	<0.004	-	-	-
Selenium	0.00105	<0.001	0.0105	<0.01	-	-	-
Vanadium	0.00713	<0.001	0.0713	<0.01	-	-	-
Zinc	0.00573	<0.001	0.0573	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000177	<0.00001	0.00177	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000657	<0.000005	0.0000657	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000517	<0.000005	0.000517	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000653	<0.000005	0.000653	<0.00005	-	-	-
Anthracene by GCMS	0.0000147	<0.000005	0.000147	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000903	<0.000005	0.000903	<0.00005	-	-	-
Fluorene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000592	<0.000005	0.000592	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000476	<0.000082	0.00476	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	1,100.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580694
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-G3
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	1,100.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580702
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-F3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00219	<0.0003	0.0219	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00447	<0.003	0.0447	<0.03	-	-	-
Nickel	0.000911	<0.0004	0.00911	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00224	<0.001	0.0224	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.204	<0.019	2.04	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000172	<0.00001	0.000172	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000247	<0.000005	0.000247	<0.00005	-	-	-
Anthracene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000303	<0.000005	0.000303	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000195	<0.000005	0.000195	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000115	<0.000082	0.00115	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.08
Conductivity (µS/cm)	286.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580702
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-F3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.08
Conductivity (µS/cm)	286.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580709
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-F3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.96	<0.2	19.6	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.086	<0.05	0.86	<0.5	-	-	-
Arsenic	0.000632	<0.0005	0.00632	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00104	<0.0003	0.0104	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00366	<0.003	0.0366	<0.03	-	-	-
Nickel	0.000623	<0.0004	0.00623	<0.004	-	-	-
Selenium	0.00131	<0.001	0.0131	<0.01	-	-	-
Vanadium	0.00152	<0.001	0.0152	<0.01	-	-	-
Zinc	0.00105	<0.001	0.0105	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.414	<0.019	4.14	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.93
Conductivity (µS/cm)	204.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580709
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-F3
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.93
Conductivity (µS/cm)	204.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580717
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-F3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0406	<0.001	0.406	<0.01	-	-	-
Copper	0.00899	<0.0003	0.0899	<0.003	-	-	-
Lead	0.000435	<0.0002	0.00435	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000647	<0.0004	0.00647	<0.004	-	-	-
Selenium	0.0014	<0.001	0.014	<0.01	-	-	-
Vanadium	0.00613	<0.001	0.0613	<0.01	-	-	-
Zinc	0.00134	<0.001	0.0134	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0104	<0.00001	0.104	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000656	<0.000005	0.000656	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000603	<0.000005	0.00603	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000897	<0.000005	0.000897	<0.00005	-	-	-
Anthracene by GCMS	0.0000512	<0.000005	0.000512	<0.00005	-	-	-
Phenanthrene by GCMS	0.000257	<0.000005	0.00257	<0.00005	-	-	-
Fluorene by GCMS	0.000177	<0.000005	0.00177	<0.00005	-	-	-
Chrysene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Pyrene by GCMS	0.0000614	<0.000005	0.000614	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000021	<0.000005	0.00021	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0118	<0.000082	0.118	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.83
Conductivity (µS/cm)	1,440.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580717
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-F3
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.83
Conductivity (µS/cm)	1,440.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	3.73
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.4
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580734
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-M8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00359	<0.0005	0.0359	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00676	<0.0003	0.0676	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00153	<0.0004	0.0153	<0.004	-	-	-
Selenium	0.00298	<0.001	0.0298	<0.01	-	-	-
Vanadium	0.138	<0.001	1.38	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.206	<0.019	2.06	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000968	<0.00001	0.000968	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000669	<0.000005	0.000669	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000378	<0.000005	0.00378	<0.00005	-	-	-
Fluoranthene by GCMS	0.00124	<0.000005	0.0124	<0.00005	-	-	-
Anthracene by GCMS	0.00025	<0.000005	0.0025	<0.00005	-	-	-
Phenanthrene by GCMS	0.000615	<0.000005	0.00615	<0.00005	-	-	-
Fluorene by GCMS	0.000232	<0.000005	0.00232	<0.00005	-	-	-
Chrysene by GCMS	0.000784	<0.000005	0.00784	<0.00005	-	-	-
Pyrene by GCMS	0.00109	<0.000005	0.0109	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000688	<0.000005	0.00688	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000937	<0.000005	0.00937	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000383	<0.000005	0.00383	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000564	<0.000002	0.00564	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000467	<0.000005	0.00467	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000406	<0.000005	0.00406	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00831	<0.000082	0.0831	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	9.57
Conductivity (µS/cm)	207.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	3.73
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.4
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580734
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-M8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	9.57
Conductivity (µS/cm)	207.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580742
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-M8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.851	<0.2	8.51	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.097	<0.05	0.97	<0.5	-	-	-
Arsenic	0.00941	<0.0005	0.0941	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0017	<0.001	0.017	<0.01	-	-	-
Copper	0.0115	<0.0003	0.115	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00468	<0.003	0.0468	<0.03	-	-	-
Nickel	0.00283	<0.0004	0.0283	<0.004	-	-	-
Selenium	0.00697	<0.001	0.0697	<0.01	-	-	-
Vanadium	0.339	<0.001	3.39	<0.01	-	-	-
Zinc	0.00121	<0.001	0.0121	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.615	<0.019	6.15	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000321	<0.00001	0.000321	<0.0001	-	-	-
Acenaphthene by GCMS	0.000152	<0.000005	0.00152	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0001	<0.000005	0.001	<0.00005	-	-	-
Fluoranthene by GCMS	0.000773	<0.000005	0.00773	<0.00005	-	-	-
Anthracene by GCMS	0.000123	<0.000005	0.00123	<0.00005	-	-	-
Phenanthrene by GCMS	0.000426	<0.000005	0.00426	<0.00005	-	-	-
Fluorene by GCMS	0.000149	<0.000005	0.00149	<0.00005	-	-	-
Chrysene by GCMS	0.000165	<0.000005	0.00165	<0.00005	-	-	-
Pyrene by GCMS	0.000556	<0.000005	0.00556	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000177	<0.000005	0.00177	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000891	<0.000005	0.000891	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0001	<0.000002	0.001	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000214	<0.000005	0.000214	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000877	<0.000005	0.000877	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00322	<0.000082	0.0322	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.40
Conductivity (µS/cm)	220.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580742
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-M8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.40
Conductivity (µS/cm)	220.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580746
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-M8
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.34	<0.2	13.4	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.12	<0.05	1.2	<0.5	-	-	-
Arsenic	0.00376	<0.0005	0.0376	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00191	<0.001	0.0191	<0.01	-	-	-
Copper	0.0236	<0.0003	0.236	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00421	<0.0004	0.0421	<0.004	-	-	-
Selenium	0.00555	<0.001	0.0555	<0.01	-	-	-
Vanadium	0.147	<0.001	1.47	<0.01	-	-	-
Zinc	0.00333	<0.001	0.0333	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.56	<0.019	5.6	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000391	<0.00001	0.000391	<0.0001	-	-	-
Acenaphthene by GCMS	0.000123	<0.000005	0.00123	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000169	<0.000005	0.00169	<0.00005	-	-	-
Fluoranthene by GCMS	0.000389	<0.000005	0.00389	<0.00005	-	-	-
Anthracene by GCMS	0.0000724	<0.000005	0.000724	<0.00005	-	-	-
Phenanthrene by GCMS	0.000377	<0.000005	0.00377	<0.00005	-	-	-
Fluorene by GCMS	0.00019	<0.000005	0.0019	<0.00005	-	-	-
Chrysene by GCMS	0.0000293	<0.000005	0.000293	<0.00005	-	-	-
Pyrene by GCMS	0.000289	<0.000005	0.00289	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000268	<0.000005	0.000268	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000226	<0.000005	0.000226	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000014	<0.000005	0.00014	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000141	<0.000002	0.000141	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000255	<0.000005	0.000255	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00179	<0.000082	0.0179	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.03
Conductivity (µS/cm)	325.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580746
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-M8
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.03
Conductivity (µS/cm)	325.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580757
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-M7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.245	<0.2	2.45	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0056	<0.0005	0.056	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0012	<0.001	0.012	<0.01	-	-	-
Copper	0.00968	<0.0003	0.0968	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00477	<0.003	0.0477	<0.03	-	-	-
Nickel	0.00212	<0.0004	0.0212	<0.004	-	-	-
Selenium	0.00363	<0.001	0.0363	<0.01	-	-	-
Vanadium	0.174	<0.001	1.74	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.262	<0.019	2.62	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000215	<0.00001	0.00215	<0.0001	-	-	-
Acenaphthene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000236	<0.000005	0.00236	<0.00005	-	-	-
Fluoranthene by GCMS	0.00176	<0.000005	0.0176	<0.00005	-	-	-
Anthracene by GCMS	0.000287	<0.000005	0.00287	<0.00005	-	-	-
Phenanthrene by GCMS	0.000733	<0.000005	0.00733	<0.00005	-	-	-
Fluorene by GCMS	0.000202	<0.000005	0.00202	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00136	<0.000005	0.0136	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000831	<0.000005	0.00831	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000806	<0.000005	0.00806	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000263	<0.000002	0.00263	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000715	<0.000005	0.000715	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000375	<0.000005	0.00375	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000433	<0.000005	0.00433	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00768	<0.000082	0.0768	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	9.95
Conductivity (µS/cm)	220.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580757
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-M7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	9.95
Conductivity (µS/cm)	220.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580762
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-K1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00325	<0.0005	0.0325	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000985	<0.0003	0.00985	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00149	<0.001	0.0149	<0.01	-	-	-
Vanadium	0.0038	<0.001	0.038	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.403	<0.019	4.03	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	0.000642	<0.00025	0.00642	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	0.000448	<0.00025	0.00448	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	0.000247	<0.0001	0.00247	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.48
Conductivity (µS/cm)	119.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580762
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-K1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.48
Conductivity (µS/cm)	119.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580770
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-M7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.31	<0.2	13.1	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00344	<0.0005	0.0344	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00192	<0.001	0.0192	<0.01	-	-	-
Copper	0.0166	<0.0003	0.166	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00489	<0.0004	0.0489	<0.004	-	-	-
Selenium	0.00565	<0.001	0.0565	<0.01	-	-	-
Vanadium	0.149	<0.001	1.49	<0.01	-	-	-
Zinc	0.00254	<0.001	0.0254	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000466	<0.00001	0.00466	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000627	<0.000005	0.000627	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000422	<0.000005	0.00422	<0.00005	-	-	-
Fluoranthene by GCMS	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Anthracene by GCMS	0.0000489	<0.000005	0.000489	<0.00005	-	-	-
Phenanthrene by GCMS	0.000271	<0.000005	0.00271	<0.00005	-	-	-
Fluorene by GCMS	0.000145	<0.000005	0.00145	<0.00005	-	-	-
Chrysene by GCMS	0.0000226	<0.000005	0.000226	<0.00005	-	-	-
Pyrene by GCMS	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000219	<0.000005	0.000219	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000176	<0.000005	0.000176	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000111	<0.000002	0.000111	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000079	<0.000005	0.000079	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00175	<0.000082	0.0175	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.45
Conductivity (µS/cm)	484.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580770
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-M7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.45
Conductivity (µS/cm)	484.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580779
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-M7
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.15	<0.2	11.5	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00383	<0.0005	0.0383	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00143	<0.001	0.0143	<0.01	-	-	-
Copper	0.0171	<0.0003	0.171	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00431	<0.0004	0.0431	<0.004	-	-	-
Selenium	0.0062	<0.001	0.062	<0.01	-	-	-
Vanadium	0.185	<0.001	1.85	<0.01	-	-	-
Zinc	0.00192	<0.001	0.0192	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000831	<0.00001	0.000831	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000468	<0.000005	0.000468	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000169	<0.000005	0.00169	<0.00005	-	-	-
Fluoranthene by GCMS	0.000154	<0.000005	0.00154	<0.00005	-	-	-
Anthracene by GCMS	0.0000269	<0.000005	0.000269	<0.00005	-	-	-
Phenanthrene by GCMS	0.000124	<0.000005	0.00124	<0.00005	-	-	-
Fluorene by GCMS	0.0000651	<0.000005	0.000651	<0.00005	-	-	-
Chrysene by GCMS	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Pyrene by GCMS	0.000138	<0.000005	0.00138	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000154	<0.000005	0.000154	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000134	<0.000005	0.000134	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000809	<0.000005	0.0000809	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000736	<0.000002	0.0000736	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000653	<0.000005	0.0000653	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000887	<0.000082	0.00887	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.09
Conductivity (µS/cm)	478.00
Temperature (°C)	181.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580779
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-M7
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	11.09
Conductivity (µS/cm)	478.00
Temperature (°C)	181.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580791
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-L7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.396	<0.2	3.96	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.07	<0.05	0.7	<0.5	-	-	-
Arsenic	0.00459	<0.0005	0.0459	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00181	<0.001	0.0181	<0.01	-	-	-
Copper	0.0137	<0.0003	0.137	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00311	<0.003	0.0311	<0.03	-	-	-
Nickel	0.00352	<0.0004	0.0352	<0.004	-	-	-
Selenium	0.00404	<0.001	0.0404	<0.01	-	-	-
Vanadium	0.19	<0.001	1.9	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.491	<0.019	4.91	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000885	<0.00001	0.000885	<0.0001	-	-	-
Acenaphthene by GCMS	0.000138	<0.000005	0.00138	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000423	<0.000005	0.00423	<0.00005	-	-	-
Fluoranthene by GCMS	0.00163	<0.000005	0.0163	<0.00005	-	-	-
Anthracene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Phenanthrene by GCMS	0.000242	<0.000005	0.00242	<0.00005	-	-	-
Fluorene by GCMS	0.000265	<0.000005	0.00265	<0.00005	-	-	-
Chrysene by GCMS	0.000278	<0.000005	0.00278	<0.00005	-	-	-
Pyrene by GCMS	0.00127	<0.000005	0.0127	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000227	<0.000005	0.00227	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000241	<0.000005	0.00241	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000123	<0.000002	0.00123	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000234	<0.000005	0.000234	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000166	<0.000005	0.00166	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000107	<0.000005	0.00107	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00547	<0.000082	0.0547	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.81
Conductivity (µS/cm)	269.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580791
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-L7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.81
Conductivity (µS/cm)	269.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580797
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-L7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.565	<0.2	5.65	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00168	<0.0005	0.0168	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0015	<0.001	0.015	<0.01	-	-	-
Copper	0.0102	<0.0003	0.102	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00233	<0.0004	0.0233	<0.004	-	-	-
Selenium	0.00354	<0.001	0.0354	<0.01	-	-	-
Vanadium	0.0906	<0.001	0.906	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000167	<0.00001	0.00167	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000583	<0.000005	0.000583	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000164	<0.000005	0.00164	<0.00005	-	-	-
Fluoranthene by GCMS	0.000236	<0.000005	0.00236	<0.00005	-	-	-
Anthracene by GCMS	0.0000528	<0.000005	0.000528	<0.00005	-	-	-
Phenanthrene by GCMS	0.000321	<0.000005	0.00321	<0.00005	-	-	-
Fluorene by GCMS	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Chrysene by GCMS	0.00000719	<0.000005	0.0000719	<0.00005	-	-	-
Pyrene by GCMS	0.000205	<0.000005	0.00205	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000998	<0.000005	0.0000998	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000318	<0.000002	0.0000318	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00133	<0.000082	0.0133	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.45
Conductivity (µS/cm)	535.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580797
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-L7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	11.45
Conductivity (µS/cm)	535.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580813
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-K1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00678	<0.0005	0.0678	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000786	<0.0003	0.00786	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0011	<0.001	0.011	<0.01	-	-	-
Vanadium	0.0179	<0.001	0.179	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.251	<0.019	2.51	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	0.000573	<0.00025	0.00573	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	0.000461	<0.00025	0.00461	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.43
Conductivity (µS/cm)	115.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580813
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-K1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.43
Conductivity (µS/cm)	115.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.129	**Natural Moisture Content (%)**	42.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	70
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580818
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-K1
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	3.66	<0.2	36.6	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00424	<0.0005	0.0424	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00293	<0.0003	0.0293	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	1.34	<0.003	13.4	<0.03	-	-	-
Nickel	0.0021	<0.0004	0.021	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0114	<0.001	0.114	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.309	<0.019	3.09	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.14
Conductivity (µS/cm)	739.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.861

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.129	**Natural Moisture Content (%)**	42.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	70
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580818
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-K1
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.14
Conductivity (µS/cm)	739.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.861

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.6
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580836
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-J1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.213	<0.2	2.13	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0092	<0.0005	0.092	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00337	<0.0003	0.0337	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00419	<0.001	0.0419	<0.01	-	-	-
Vanadium	0.0602	<0.001	0.602	<0.01	-	-	-
Zinc	0.00177	<0.001	0.0177	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	0.000262	<0.00025	0.00262	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.27
Conductivity (µS/cm)	150.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.6
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580836
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-J1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	9.27
Conductivity (µS/cm)	150.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.37
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.9
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580844
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-J1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00792	<0.0005	0.0792	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00363	<0.0003	0.0363	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000642	<0.0004	0.00642	<0.004	-	-	-
Selenium	0.00201	<0.001	0.0201	<0.01	-	-	-
Vanadium	0.0989	<0.001	0.989	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000652	<0.00001	0.000652	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000949	<0.000005	0.0000949	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000187	<0.000005	0.000187	<0.00005	-	-	-
Fluoranthene by GCMS	0.000332	<0.000005	0.00332	<0.00005	-	-	-
Anthracene by GCMS	0.0000596	<0.000005	0.000596	<0.00005	-	-	-
Phenanthrene by GCMS	0.000228	<0.000005	0.00228	<0.00005	-	-	-
Fluorene by GCMS	0.000028	<0.000005	0.00028	<0.00005	-	-	-
Chrysene by GCMS	0.0000945	<0.000005	0.000945	<0.00005	-	-	-
Pyrene by GCMS	0.00022	<0.000005	0.0022	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000072	<0.000005	0.00072	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000546	<0.000005	0.000546	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000066	<0.000002	0.00066	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000389	<0.000005	0.000389	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000356	<0.000005	0.000356	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00143	<0.000082	0.0143	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.21
Conductivity (µS/cm)	183.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.37
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.9
Particle Size <4mm	>95%		

Case	
SDG	181023-13
Lab Sample Number(s)	18580844
Sampled Date	22-Oct-2018
Customer Sample Ref.	3C-J1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	24-Oct-2018
pH (pH Units)	10.21
Conductivity (µS/cm)	183.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Notification of NDPs (No determination possible)

Date Received : 23/10/2018 08:28:34

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
18580661	3C-H3	0.50 - 0.50	Asbestos Quantification - Full	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	Asbestos Quantification - Full	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	pH Value	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	pH Value	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	PAH Spec MS - Aqueous (W)	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	PAH Spec MS - Aqueous (W)	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	TPH CWG (W)	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	TPH CWG (W)	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	EPH CWG (Aliphatic) Aqueous GC (W)	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	EPH CWG (Aliphatic) Aqueous GC (W)	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	EPH CWG (Aromatic) Aqueous GC (W)	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	EPH CWG (Aromatic) Aqueous GC (W)	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	GRO by GC-FID (W)	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	GRO by GC-FID (W)	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	Mercury Dissolved	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	Mercury Dissolved	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	Dissolved Metals by ICP-MS	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	Dissolved Metals by ICP-MS	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	Cyanide Comp/Free/Total/Thiocyanate	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	Cyanide Comp/Free/Total/Thiocyanate	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	Ammoniacal Nitrogen	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	Ammoniacal Nitrogen	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	CEN 10:1 Leachate (1 Stage)	Insufficient Sample
18580661	3C-H3	0.50 - 0.50	CEN 10:1 Leachate (1 Stage)	Insufficient Sample

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Test Completion Dates

Lab Sample No(s)	18580702	18580709	18580717	18580624	18580633	18580643	18580724	18580651	18580597	18580605
Customer Sample Ref.	3C-F3	3C-F3	3C-F3	3C-F4	3C-F4	3C-F4	3C-F3-V	3C-F4-V	3C-G1	3C-G1
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.10 - 1.10	1.50 - 1.50	2.80 - 2.80	2.70 - 2.70	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	27-Oct-2018		31-Oct-2018	27-Oct-2018		27-Oct-2018			06-Nov-2018	
Ammoniacal Nitrogen	31-Oct-2018	01-Nov-2018	31-Oct-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018			30-Oct-2018	31-Oct-2018
Ammonium Soil by Titration	05-Nov-2018	06-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	06-Nov-2018
Anions by Kone (soil)	26-Oct-2018		26-Oct-2018	26-Oct-2018		26-Oct-2018			30-Oct-2018	
Asbestos ID in Solid Samples	05-Nov-2018		05-Nov-2018	05-Nov-2018		05-Nov-2018			05-Nov-2018	
CEN 10:1 Leachate (1 Stage)	25-Oct-2018	25-Oct-2018	24-Oct-2018	24-Oct-2018	05-Nov-2018	24-Oct-2018			26-Oct-2018	26-Oct-2018
CEN Readings	27-Oct-2018	31-Oct-2018	27-Oct-2018	02-Nov-2018	06-Nov-2018	31-Oct-2018			02-Nov-2018	02-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	07-Nov-2018	12-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	07-Nov-2018	02-Nov-2018	12-Nov-2018	12-Nov-2018	07-Nov-2018
Dissolved Metals by ICP-MS	02-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018			02-Nov-2018	02-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	01-Nov-2018	02-Nov-2018	31-Oct-2018	02-Nov-2018	07-Nov-2018	02-Nov-2018			01-Nov-2018	01-Nov-2018
EPH CWG (Aliphatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	29-Oct-2018	29-Oct-2018	26-Oct-2018	29-Oct-2018	26-Oct-2018	26-Oct-2018	29-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	01-Nov-2018	02-Nov-2018	31-Oct-2018	02-Nov-2018	07-Nov-2018	02-Nov-2018			01-Nov-2018	01-Nov-2018
EPH CWG (Aromatic) GC (S)	26-Oct-2018	26-Oct-2018	26-Oct-2018	29-Oct-2018	29-Oct-2018	26-Oct-2018	29-Oct-2018	26-Oct-2018	26-Oct-2018	06-Nov-2018
GRO by GC-FID (S)	31-Oct-2018	01-Nov-2018	05-Nov-2018	31-Oct-2018	05-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018
GRO by GC-FID (W)	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018			01-Nov-2018	01-Nov-2018
Mercury Dissolved	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018			05-Nov-2018	05-Nov-2018
Metals in solid samples by OES	26-Oct-2018	06-Nov-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018
PAH by GCMS	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	25-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018
PAH Spec MS - Aqueous (W)	30-Oct-2018	02-Nov-2018	31-Oct-2018	02-Nov-2018	07-Nov-2018	02-Nov-2018			30-Oct-2018	30-Oct-2018
pH	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	02-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018
pH Value	05-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018			05-Nov-2018	05-Nov-2018
Phenols by HPLC (S)	05-Nov-2018	02-Nov-2018	05-Nov-2018	29-Oct-2018	29-Oct-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	06-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	07-Nov-2018	06-Nov-2018	31-Oct-2018	02-Nov-2018	07-Nov-2018	31-Oct-2018
Total Sulphate	26-Oct-2018		26-Oct-2018	30-Oct-2018		26-Oct-2018			30-Oct-2018	
Total Sulphur	25-Oct-2018		25-Oct-2018	25-Oct-2018		25-Oct-2018			26-Oct-2018	
TPH CWG (W)	01-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	07-Nov-2018	02-Nov-2018			01-Nov-2018	01-Nov-2018
TPH CWG GC (S)	31-Oct-2018	01-Nov-2018	05-Nov-2018	31-Oct-2018	05-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	05-Nov-2018	06-Nov-2018
VOC MS (S)	31-Oct-2018	31-Oct-2018	03-Nov-2018	31-Oct-2018	05-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	04-Nov-2018	03-Nov-2018

Lab Sample No(s)	18580668	18580676	18580694	18580616	18580545	18580556	18580564	18580661	18580572	18580511
Customer Sample Ref.	3C-G3	3C-G3	3C-G3	3C-G1-V	3C-H1	3C-H1	3C-H1	3C-H3	3C-H1-V	3C-I1
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	1.70 - 1.70	0.25 - 0.25	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.25 - 1.25	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	27-Oct-2018		27-Oct-2018			27-Oct-2018		31-Oct-2018		27-Oct-2018
Ammoniacal Nitrogen	30-Oct-2018	31-Oct-2018	30-Oct-2018		01-Nov-2018	31-Oct-2018	01-Nov-2018			01-Nov-2018
Ammonium Soil by Titration	05-Nov-2018	05-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	05-Nov-2018	02-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018
Anions by Kone (soil)	26-Oct-2018		26-Oct-2018			26-Oct-2018		26-Oct-2018		26-Oct-2018
Asbestos ID in Solid Samples	05-Nov-2018		05-Nov-2018			05-Nov-2018		05-Nov-2018		05-Nov-2018
CEN 10:1 Leachate (1 Stage)	25-Oct-2018	26-Oct-2018	25-Oct-2018		25-Oct-2018	25-Oct-2018	25-Oct-2018			25-Oct-2018
CEN Readings	27-Oct-2018	02-Nov-2018	27-Oct-2018		27-Oct-2018	27-Oct-2018	27-Oct-2018			31-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	12-Nov-2018	07-Nov-2018	06-Nov-2018	12-Nov-2018	07-Nov-2018	06-Nov-2018	12-Nov-2018	02-Nov-2018	06-Nov-2018	12-Nov-2018
Dissolved Metals by ICP-MS	06-Nov-2018	02-Nov-2018	02-Nov-2018		06-Nov-2018	06-Nov-2018	06-Nov-2018			06-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	31-Oct-2018	01-Nov-2018	31-Oct-2018		31-Oct-2018	31-Oct-2018	31-Oct-2018			02-Nov-2018
EPH CWG (Aliphatic) GC (S)	30-Oct-2018	30-Oct-2018	26-Oct-2018	05-Nov-2018	29-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	31-Oct-2018	01-Nov-2018	31-Oct-2018		31-Oct-2018	31-Oct-2018	31-Oct-2018			02-Nov-2018
EPH CWG (Aromatic) GC (S)	30-Oct-2018	30-Oct-2018	26-Oct-2018	05-Nov-2018	29-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	30-Oct-2018
GRO by GC-FID (S)	04-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018
GRO by GC-FID (W)	01-Nov-2018	01-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018	01-Nov-2018			01-Nov-2018
Mercury Dissolved	05-Nov-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	05-Nov-2018	05-Nov-2018			05-Nov-2018
Metals in solid samples by OES	26-Oct-2018	30-Oct-2018	26-Oct-2018	06-Nov-2018	02-Nov-2018	26-Oct-2018	29-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018
PAH by GCMS	29-Oct-2018	02-Nov-2018	30-Oct-2018	31-Oct-2018	30-Oct-2018	25-Oct-2018	29-Oct-2018	30-Oct-2018	02-Nov-2018	02-Nov-2018
PAH Spec MS - Aqueous (W)	31-Oct-2018	30-Oct-2018	31-Oct-2018		31-Oct-2018	31-Oct-2018	31-Oct-2018			02-Nov-2018
pH	06-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018
pH Value	05-Nov-2018	05-Nov-2018	05-Nov-2018		05-Nov-2018	05-Nov-2018	05-Nov-2018			02-Nov-2018
Phenols by HPLC (S)	05-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018	29-Oct-2018	05-Nov-2018	29-Oct-2018	02-Nov-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	24-Oct-2018
Total Organic Carbon	06-Nov-2018	06-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	31-Oct-2018	06-Nov-2018	26-Oct-2018	02-Nov-2018
Total Sulphate	26-Oct-2018		26-Oct-2018			26-Oct-2018		26-Oct-2018		30-Oct-2018
Total Sulphur	25-Oct-2018		25-Oct-2018			25-Oct-2018		25-Oct-2018		25-Oct-2018
TPH CWG (W)	01-Nov-2018	01-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018	01-Nov-2018			02-Nov-2018
TPH CWG GC (S)	04-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018
VOC MS (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG: 181023-13 **Client Reference:** **Report Number:** 480663
Location: Llanwern **Order Number:** LLA494 **Superseded Report:** 480662

Lab Sample No(s)	18580519	18580527	18580535	18580495	18580836	18580844	18580503	18580762	18580813	18580818
Customer Sample Ref.	3C-I1	3C-I1	3C-I1-V	3C-J1	3C-J1	3C-J1	3C-J1-V	3C-K1	3C-K1	3C-K1
AGS Ref.										
Depth	1.00 - 1.00	1.50 - 1.50	1.70 - 1.70	1.50 - 1.50	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		27-Oct-2018				27-Oct-2018		30-Oct-2018		31-Oct-2018
Ammoniacal Nitrogen	02-Nov-2018	01-Nov-2018		30-Oct-2018	01-Nov-2018	31-Oct-2018		31-Oct-2018	01-Nov-2018	01-Nov-2018
Ammonium Soil by Titration	02-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018
Anions by Kone (soil)		26-Oct-2018				26-Oct-2018		30-Oct-2018		30-Oct-2018
Asbestos ID in Solid Samples		05-Nov-2018				05-Nov-2018		05-Nov-2018		05-Nov-2018
CEN 10:1 Leachate (1 Stage)	25-Oct-2018	25-Oct-2018		24-Oct-2018	25-Oct-2018	24-Oct-2018		27-Oct-2018	27-Oct-2018	27-Oct-2018
CEN Readings	02-Nov-2018	31-Oct-2018		27-Oct-2018	31-Oct-2018	27-Oct-2018		02-Nov-2018	02-Nov-2018	31-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	07-Nov-2018	07-Nov-2018	12-Nov-2018	07-Nov-2018	06-Nov-2018	07-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	12-Nov-2018
Dissolved Metals by ICP-MS	06-Nov-2018	06-Nov-2018		06-Nov-2018	06-Nov-2018	02-Nov-2018		06-Nov-2018	06-Nov-2018	06-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	03-Nov-2018	02-Nov-2018		31-Oct-2018	02-Nov-2018	01-Nov-2018		06-Nov-2018	06-Nov-2018	05-Nov-2018
EPH CWG (Aliphatic) GC (S)	29-Oct-2018	30-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	03-Nov-2018	02-Nov-2018		31-Oct-2018	02-Nov-2018	01-Nov-2018		06-Nov-2018	06-Nov-2018	05-Nov-2018
EPH CWG (Aromatic) GC (S)	29-Oct-2018	30-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018
GRO by GC-FID (S)	04-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018	31-Oct-2018	01-Nov-2018
GRO by GC-FID (W)	03-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018	03-Nov-2018
Mercury Dissolved	06-Nov-2018	06-Nov-2018		05-Nov-2018	05-Nov-2018	05-Nov-2018		06-Nov-2018	05-Nov-2018	06-Nov-2018
Metals in solid samples by OES	30-Oct-2018	26-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018
PAH by GCMS	29-Oct-2018	25-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018
PAH Spec MS - Aqueous (W)	05-Nov-2018	02-Nov-2018		31-Oct-2018	02-Nov-2018	30-Oct-2018		31-Oct-2018	31-Oct-2018	05-Nov-2018
pH	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
pH Value	02-Nov-2018	02-Nov-2018		05-Nov-2018	02-Nov-2018	05-Nov-2018		05-Nov-2018	05-Nov-2018	01-Nov-2018
Phenols by HPLC (S)	29-Oct-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	24-Oct-2018	23-Oct-2018
Total Organic Carbon	31-Oct-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	31-Oct-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	06-Nov-2018
Total Sulphate		30-Oct-2018				26-Oct-2018		30-Oct-2018		31-Oct-2018
Total Sulphur		26-Oct-2018				25-Oct-2018		01-Nov-2018		01-Nov-2018
TPH CWG (W)	03-Nov-2018	02-Nov-2018		01-Nov-2018	02-Nov-2018	01-Nov-2018		06-Nov-2018	06-Nov-2018	05-Nov-2018
TPH CWG GC (S)	04-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	31-Oct-2018	31-Oct-2018	01-Nov-2018
VOC MS (S)	03-Nov-2018	02-Nov-2018	03-Nov-2018	03-Nov-2018	05-Nov-2018	05-Nov-2018	03-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018

Lab Sample No(s)	18580829	18580791	18580797	18580806	18580757	18580770	18580779	18580734	18580742	18580746
Customer Sample Ref.	3C-K1-V	3C-L7	3C-L7	3C-L7-V	3C-M7	3C-M7	3C-M7	3C-M8	3C-M8	3C-M8
AGS Ref.										
Depth	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)			27-Oct-2018		27-Oct-2018		27-Oct-2018		25-Oct-2018	
Ammoniacal Nitrogen		31-Oct-2018	31-Oct-2018		31-Oct-2018	01-Nov-2018	01-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
Ammonium Soil by Titration	06-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	05-Nov-2018
Anions by Kone (soil)			26-Oct-2018		26-Oct-2018		30-Oct-2018		26-Oct-2018	
Asbestos ID in Solid Samples			05-Nov-2018		05-Nov-2018		05-Nov-2018		05-Nov-2018	
Asbestos Quantification - Full			06-Nov-2018							
CEN 10:1 Leachate (1 Stage)		24-Oct-2018	24-Oct-2018		24-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018
CEN Readings		27-Oct-2018	27-Oct-2018		27-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018
Cyanide Comp/Free/Total/Thiocyanate	02-Nov-2018	07-Nov-2018	07-Nov-2018	12-Nov-2018	29-Oct-2018	07-Nov-2018	12-Nov-2018	06-Nov-2018	07-Nov-2018	12-Nov-2018
Dissolved Metals by ICP-MS		06-Nov-2018	06-Nov-2018		06-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018	06-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)		31-Oct-2018	31-Oct-2018		31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
EPH CWG (Aliphatic) GC (S)	26-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)		31-Oct-2018	31-Oct-2018		31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
EPH CWG (Aromatic) GC (S)	26-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	26-Oct-2018	26-Oct-2018	26-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018
GRO by GC-FID (S)	04-Nov-2018	02-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	05-Nov-2018
GRO by GC-FID (W)		01-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018
Mercury Dissolved		05-Nov-2018	05-Nov-2018		05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
Metals in solid samples by OES	29-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018	30-Oct-2018	25-Oct-2018	30-Oct-2018
PAH by GCMS	29-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	05-Nov-2018	02-Nov-2018
PAH Spec MS - Aqueous (W)		31-Oct-2018	31-Oct-2018		31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
pH	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
pH Value		05-Nov-2018	05-Nov-2018		05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
Phenols by HPLC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	29-Oct-2018	02-Nov-2018	02-Nov-2018	29-Oct-2018	29-Oct-2018	05-Nov-2018
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018
Total Organic Carbon	06-Nov-2018	25-Oct-2018	06-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	25-Oct-2018	06-Nov-2018
Total Sulphate			30-Oct-2018		26-Oct-2018		26-Oct-2018		30-Oct-2018	
Total Sulphur			26-Oct-2018		25-Oct-2018		25-Oct-2018		24-Oct-2018	
TPH CWG (W)		01-Nov-2018	01-Nov-2018		01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018
TPH CWG GC (S)	04-Nov-2018	02-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	05-Nov-2018
VOC MS (S)	03-Nov-2018	04-Nov-2018	04-Nov-2018	02-Nov-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018	31-Oct-2018	31-Oct-2018	05-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181023-13	**Client Reference:**		**Report Number:**	480663
Location:	Llanwern	**Order Number:**	LLA494	**Superseded Report:**	480662

Lab Sample No(s)	18580482	18580582	18580685	18580785	18580753	
Customer Sample Ref.	3C-ML1	3C-ML1	3C-ML1-V	3C-M7-V	3C-M8-V	
AGS Ref.						
Depth	0.60 - 0.60	1.00 - 1.00	1.60 - 1.60	3.30 - 3.30	3.50 - 3.50	
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
Alkali Metals by iCap-OES (Soil)	27-Oct-2018					
Ammoniacal Nitrogen	31-Oct-2018	01-Nov-2018				
Ammonium Soil by Titration	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	
Anions by Kone (soil)	26-Oct-2018					
Asbestos ID in Solid Samples	05-Nov-2018					
CEN 10:1 Leachate (1 Stage)	24-Oct-2018	26-Oct-2018				
CEN Readings	27-Oct-2018	27-Oct-2018				
Cyanide Comp/Free/Total/Thiocyanate	07-Nov-2018	07-Nov-2018	02-Nov-2018	07-Nov-2018	06-Nov-2018	
Dissolved Metals by ICP-MS	02-Nov-2018	06-Nov-2018				
EPH CWG (Aliphatic) Aqueous GC (W)	31-Oct-2018	31-Oct-2018				
EPH CWG (Aliphatic) GC (S)	26-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	26-Oct-2018	
EPH CWG (Aromatic) Aqueous GC (W)	31-Oct-2018	31-Oct-2018				
EPH CWG (Aromatic) GC (S)	26-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	26-Oct-2018	
GRO by GC-FID (S)	05-Nov-2018	31-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	
GRO by GC-FID (W)	01-Nov-2018	01-Nov-2018				
Mercury Dissolved	05-Nov-2018	05-Nov-2018				
Metals in solid samples by OES	26-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	
PAH by GCMS	25-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	
PAH Spec MS - Aqueous (W)	31-Oct-2018	31-Oct-2018				
pH	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	
pH Value	05-Nov-2018	05-Nov-2018				
Phenols by HPLC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	29-Oct-2018	05-Nov-2018	
Sample description	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	23-Oct-2018	
Total Organic Carbon	06-Nov-2018	02-Nov-2018	07-Nov-2018	07-Nov-2018	02-Nov-2018	
Total Sulphate	26-Oct-2018					
Total Sulphur	25-Oct-2018					
TPH CWG (W)	01-Nov-2018	01-Nov-2018				
TPH CWG GC (S)	05-Nov-2018	31-Oct-2018	31-Oct-2018	05-Nov-2018	05-Nov-2018	
VOC MS (S)	31-Oct-2018	31-Oct-2018	31-Oct-2018	02-Nov-2018	02-Nov-2018	

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Hawarden
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Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	13 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181024-39
Your Reference:	
Location:	Llanwern
Report No:	480803

This report has been revised and directly supersedes 480797 in its entirety.

We received 42 samples on Wednesday October 24, 2018 and 41 of these samples were scheduled for analysis which was completed on Tuesday November 13, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18591010	3C-B1		0.50 - 0.50	23/10/2018
18591016	3C-B1		0.80 - 0.80	23/10/2018
18591023	3C-B1		1.20 - 1.20	23/10/2018
18591033	3C-B1-V		1.65 - 1.65	23/10/2018
18590869	3C-C1		0.50 - 0.50	23/10/2018
18590963	3C-C1		1.00 - 1.00	23/10/2018
18590998	3C-C1-V		1.45 - 1.45	23/10/2018
18590947	3C-D1		0.30 - 0.30	23/10/2018
18590974	3C-D1		0.70 - 0.70	23/10/2018
18590981	3C-D1		1.20 - 1.20	23/10/2018
18590791	3C-D1-V		1.65 - 1.65	23/10/2018
18590904	3C-E1		0.40 - 0.40	23/10/2018
18590924	3C-E1		1.00 - 1.00	23/10/2018
18590937	3C-E1-V		1.80 - 1.80	23/10/2018
18590708	3C-F1		0.30 - 0.30	23/10/2018
18590733	3C-F1		1.00 - 1.00	23/10/2018
18590823	3C-F1-V		1.75 - 1.75	23/10/2018
18590766	3C-K6		0.50 - 0.50	23/10/2018
18590774	3C-K6		1.00 - 1.00	23/10/2018
18590878	3C-K7		0.50 - 0.50	23/10/2018
18590886	3C-K7		1.00 - 1.00	23/10/2018
18590898	3C-K8		0.70 - 0.70	23/10/2018
18590910	3C-K8		1.80 - 1.80	23/10/2018
18590784	3C-K6-V		2.50 - 2.50	23/10/2018
18590893	3C-K7-V		2.20 - 2.20	23/10/2018
18590919	3C-K8-V		2.80 - 2.80	23/10/2018
18590838	3C-L5		0.50 - 0.50	23/10/2018
18590848	3C-L5		2.00 - 2.00	23/10/2018
18590857	3C-L5		3.00 - 3.00	23/10/2018
18590750	3C-L6		0.50 - 0.50	23/10/2018
18590755	3C-L6		1.00 - 1.00	23/10/2018
18590863	3C-L5-V		5.40 - 5.40	23/10/2018
18590760	3C-L6-V		3.00 - 3.00	23/10/2018
18590797	3C-M5		0.50 - 0.50	23/10/2018
18590804	3C-M5		2.00 - 2.00	23/10/2018
18590813	3C-M5		3.00 - 3.00	23/10/2018
18590828	3C-M5		4.00 - 4.00	23/10/2018
18590716	3C-M6		0.70 - 0.70	23/10/2018
18590725	3C-M6		1.50 - 1.50	23/10/2018
18590831	3C-M5-V		4.70 - 4.70	23/10/2018
18590742	3C-M6-V		3.20 - 3.20	23/10/2018
18590988	NO ID			

Maximum Sample/Coolbox Temperature (°C) : **6.0**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	18591010			18591016			18591023			18591033			18590869			18590963			18590998	
			Customer Sample Reference	3C-B1			3C-B1			3C-B1			3C-B1-V			3C-C1			3C-C1			3C-C1-V	
			AGS Reference																				
			Depth (m)	0.50 - 0.50			0.80 - 0.80			1.20 - 1.20			1.65 - 1.65			0.50 - 0.50			1.00 - 1.00			1.45 - 1.45	
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 16			X						X					X							
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 29		X			X			X					X			X					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41			X			X			X			X			X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 16			X						X						X						
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16		X						X					X								
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2																					
CEN Readings	All	NDPs: 0 Tests: 29		X			X			X					X			X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 70		X	X		X	X		X	X		X		X	X		X	X		X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 29		X			X			X					X			X					
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 29		X			X			X					X			X					
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 29		X			X			X					X			X					
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 41			X			X			X			X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41				X			X			X			X			X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 29		X			X			X					X			X					

18590708	3C-F1		0.30 - 0.30	250g Amber Jar (ALE210)	S		x			x		x					x				x				x				
				1kg TUB	S			x					x			x		x	x	x	x			x					x
18590937	3C-E1-V		1.80 - 1.80	60g VOC (ALE215)	S																							x		
				250g Amber Jar (ALE210)	S					x							x				x				x					
18590924	3C-E1		1.00 - 1.00	60g VOC (ALE215)	S																							x		
				250g Amber Jar (ALE210)	S		x			x		x					x				x				x					
				1kg TUB	S			x					x			x		x	x	x	x			x					x
18590904	3C-E1		0.40 - 0.40	60g VOC (ALE215)	S																							x		
				250g Amber Jar (ALE210)	S					x							x				x				x					
				1kg TUB	S			x					x			x		x	x	x	x			x					x
18590791	3C-D1-V		1.65 - 1.65	60g VOC (ALE215)	S																							x		
				250g Amber Jar (ALE210)	S					x							x				x				x					
18590981	3C-D1		1.20 - 1.20	60g VOC (ALE215)	S																							x		
				250g Amber Jar (ALE210)	S		x			x		x					x				x				x					
				1kg TUB	S			x					x			x		x	x	x	x			x					x
18590974	3C-D1		0.70 - 0.70	60g VOC (ALE215)	S																							x		
				250g Amber Jar (ALE210)	S					x							x				x				x					
				1kg TUB	S			x					x			x		x	x	x	x			x					x
18590947	3C-D1		0.30 - 0.30	60g VOC (ALE215)	S																							x		
				250g Amber Jar (ALE210)	S		x			x		x					x				x				x					
				1kg TUB	S			x				x	x			x		x	x	x	x			x					x

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18591010			18591016			18591023			18591033			18590869			18590963			18590998	
Customer Sample Reference			3C-B1			3C-B1			3C-B1			3C-B1-V			3C-C1			3C-C1			3C-C1-V	
AGS Reference																						
Depth (m)			0.50 - 0.50			0.80 - 0.80			1.20 - 1.20			1.65 - 1.65			0.50 - 0.50			1.00 - 1.00			1.45 - 1.45	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 29	X			X			X					X			X					
Metals in solid samples by OES	All	NDPs: 0 Tests: 41		X			X			X		X			X			X		X		X
PAH by GCMS	All	NDPs: 0 Tests: 41		X			X			X		X			X			X		X		X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 29	X			X			X					X			X					
pH	All	NDPs: 0 Tests: 41		X			X			X		X			X			X		X		X
pH Value	All	NDPs: 0 Tests: 29	X			X			X					X			X					
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41		X			X			X		X			X			X		X		X
Sample description	All	NDPs: 0 Tests: 41		X			X			X		X			X			X		X		X
Total Organic Carbon	All	NDPs: 0 Tests: 41		X			X			X		X			X			X		X		X
Total Sulphate	All	NDPs: 0 Tests: 16		X						X					X							
Total Sulphur	All	NDPs: 0 Tests: 16		X						X					X							
TPH CWG (W)	All	NDPs: 0 Tests: 29	X			X			X					X			X					
TPH CWG GC (S)	All	NDPs: 0 Tests: 41		X			X			X		X			X			X		X		X
VOC MS (S)	All	NDPs: 0 Tests: 41			X			X			X		X			X			X			X	X

18590708	3C-F1		0.30 - 0.30	250g Amber Jar (ALE210)	S			x		x			x			x		x		x			x	
				1kg TUB	S		x				x			x								x		
18590937	3C-E1-V		1.80 - 1.80	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S			x		x			x			x		x					x	
18590924	3C-E1		1.00 - 1.00	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S			x		x			x			x		x		x			x	
				1kg TUB	S		x				x			x								x		
18590904	3C-E1		0.40 - 0.40	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S			x		x			x			x							x	
				1kg TUB	S		x				x			x								x		
18590791	3C-D1-V		1.65 - 1.65	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S			x		x			x			x							x	
18590981	3C-D1		1.20 - 1.20	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S			x		x			x			x		x		x			x	
				1kg TUB	S		x				x			x								x		
18590974	3C-D1		0.70 - 0.70	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S			x		x			x			x		x					x	
				1kg TUB	S		x				x			x								x		
18590947	3C-D1		0.30 - 0.30	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S			x		x			x			x		x		x			x	
				1kg TUB	S		x				x			x								x		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18590708	18590733			18590823			18590766			18590774			18590878			18590886		18590898
Customer Sample Reference			3C-F1	3C-F1			3C-F1-V			3C-K6			3C-K6			3C-K7			3C-K7		3C-K8
AGS Reference																						
Depth (m)			0.30 - 0.30	1.00 - 1.00			1.75 - 1.75			0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00		0.70 - 0.70
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 16								X						X						
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 29		X					X			X			X			X			X	X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 41			X		X			X			X			X				X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 16								X						X						
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16							X						X							X
CEN Readings	All	NDPs: 0 Tests: 29		X					X			X			X			X				X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 70		X	X		X		X	X		X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 29		X					X			X			X			X				X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 29		X					X			X			X			X				X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 41			X		X			X			X			X				X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 29		X					X			X			X			X				X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 41			X		X			X			X			X				X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 41	X			X		X			X			X			X				X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 29		X					X			X			X			X				X
Mercury Dissolved	All	NDPs: 0 Tests: 29		X					X			X			X			X				X

18590750	3C-L6		0.50 - 0.50	1kg TUB	S		X				X	X	X	X		X			X	X			
18590857	3C-L5		3.00 - 3.00	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X							
				1kg TUB	S		X			X	X	X	X	X		X			X	X			
18590848	3C-L5		2.00 - 2.00	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S			X				X			X		X							
				1kg TUB	S		X				X	X	X	X		X			X	X			
18590838	3C-L5		0.50 - 0.50	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X							
				1kg TUB	S		X			X	X	X	X	X		X			X	X			
18590919	3C-K8-V		2.80 - 2.80	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S			X				X			X		X							
18590893	3C-K7-V		2.20 - 2.20	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S			X				X			X		X							
18590784	3C-K6-V		2.50 - 2.50	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S			X				X			X		X							
18590910	3C-K8		1.80 - 1.80	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S			X				X			X		X							
				1kg TUB	S		X				X	X	X	X		X			X	X			
18590898	3C-K8		0.70 - 0.70	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X							

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
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LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
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UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18590708	18590733		18590823		18590766		18590774		18590878		18590886		18590898					
Customer Sample Reference			3C-F1	3C-F1		3C-F1-V		3C-K6		3C-K6		3C-K7		3C-K7		3C-K8					
AGS Reference																					
Depth (m)			0.30 - 0.30	1.00 - 1.00		1.75 - 1.75		0.50 - 0.50		1.00 - 1.00		0.50 - 0.50		1.00 - 1.00		0.70 - 0.70					
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 41			X		X			X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 41			X		X			X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 29		X					X			X			X			X			X
pH	All	NDPs: 0 Tests: 41			X		X			X			X			X			X		
pH Value	All	NDPs: 0 Tests: 29		X					X			X			X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41			X		X			X			X			X			X		
Sample description	All	NDPs: 0 Tests: 41			X		X			X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 41			X		X			X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 16								X						X					
Total Sulphur	All	NDPs: 0 Tests: 16								X						X					
TPH CWG (W)	All	NDPs: 0 Tests: 29		X					X			X			X			X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 41			X		X			X			X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 41	X			X		X			X			X			X			X		

| 18590750 | 3C-L6 | | 0.50 - 0.50 | 1kg TUB | S | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Results Legend

X Test

N No Determination Possible

Sample Types -

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| | | | | |

18590742	3C-M6-V		3.20 - 3.20	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X			X			X			
18590831	3C-M5-V		4.70 - 4.70	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X			X			X			
18590725	3C-M6		1.50 - 1.50	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S			X					X			X			X			
				1kg TUB	S		X					X	X	X	X	X		X				X
18590716	3C-M6		0.70 - 0.70	60g VOC (ALE215)	S																	X	
				250g Amber Jar (ALE210)	S	X		X	X				X			X			X			
				1kg TUB	S		X			X		X	X	X	X	X		X				X
18590828	3C-M5		4.00 - 4.00	250g Amber Jar (ALE210)	S			X					X			X			X		X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
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DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18590750		18590755			18590863		18590760		18590797			18590804			18590813			18590828
Customer Sample Reference			3C-L6		3C-L6			3C-L5-V		3C-L6-V		3C-M5			3C-M5			3C-M5			3C-M5
AGS Reference																					
Depth (m)			0.50 - 0.50		1.00 - 1.00			5.40 - 5.40		3.00 - 3.00		0.50 - 0.50			2.00 - 2.00			3.00 - 3.00			4.00 - 4.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 29			X							X			X			X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 41	X			X		X		X			X			X			X		
PAH by GCMS	All	NDPs: 0 Tests: 41	X			X		X		X			X			X			X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 29			X							X			X			X			X
pH	All	NDPs: 0 Tests: 41	X			X		X		X			X			X			X		
pH Value	All	NDPs: 0 Tests: 29			X							X			X			X			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 41	X			X		X		X			X			X			X		
Sample description	All	NDPs: 0 Tests: 41	X			X		X		X			X			X			X		
Total Organic Carbon	All	NDPs: 0 Tests: 41	X			X		X		X			X			X			X		
Total Sulphate	All	NDPs: 0 Tests: 16				X							X						X		
Total Sulphur	All	NDPs: 0 Tests: 16				X							X						X		
TPH CWG (W)	All	NDPs: 0 Tests: 29			X							X			X			X			X
TPH CWG GC (S)	All	NDPs: 0 Tests: 41	X			X		X		X			X			X			X		
VOC MS (S)	All	NDPs: 0 Tests: 41		X			X		X		X			X			X			X		

18590742	3C-M6-V		3.20 - 3.20	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X		X		X		X		X		X					X	
18590831	3C-M5-V		4.70 - 4.70	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X		X		X		X		X		X					X	
18590725	3C-M6		1.50 - 1.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X		X		X		X		X		X					X	
				1kg TUB	S	X				X		X								X			
18590716	3C-M6		0.70 - 0.70	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X		X		X		X		X		X	X	X			X	
				1kg TUB	S	X				X		X								X			
18590828	3C-M5		4.00 - 4.00	250g Amber Jar (ALE210)	S		X		X		X		X		X		X					X	X

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18591010	3C-B1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Brick
18591016	3C-B1	0.80 - 0.80	Dark Brown	Sandy Loam	Brick	Stones
18591023	3C-B1	1.20 - 1.20	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
18591033	3C-B1-V	1.65 - 1.65	Dark Brown	Silty Clay Loam	Vegetation	None
18590869	3C-C1	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18590963	3C-C1	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18590998	3C-C1-V	1.45 - 1.45	Dark Brown	Silty Clay	Vegetation	None
18590947	3C-D1	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Brick
18590974	3C-D1	0.70 - 0.70	Light Brown	Loamy Sand	Stones	Vegetation
18590981	3C-D1	1.20 - 1.20	Dark Brown	Sandy Clay Loam	Stones	Vegetation
18590791	3C-D1-V	1.65 - 1.65	Dark Brown	Silty Clay	Vegetation	None
18590904	3C-E1	0.40 - 0.40	Dark Brown	Sand	Stones	Concrete/Aggregate
18590924	3C-E1	1.00 - 1.00	Dark Brown	Sandy Loam	Brick	Stones
18590937	3C-E1-V	1.80 - 1.80	Dark Brown	Silty Clay	Vegetation	None
18590708	3C-F1	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
18590733	3C-F1	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Brick
18590823	3C-F1-V	1.75 - 1.75	Dark Brown	Silty Clay Loam	None	Vegetation
18590766	3C-K6	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18590774	3C-K6	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18590878	3C-K7	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18590886	3C-K7	1.00 - 1.00	Black	Sand	Stones	Vegetation
18590898	3C-K8	0.70 - 0.70	Dark Brown	Sand	Stones	Vegetation
18590910	3C-K8	1.80 - 1.80	Dark Brown	Sand	Stones	Vegetation
18590784	3C-K6-V	2.50 - 2.50	Dark Brown	Clay	Vegetation	Stones
18590893	3C-K7-V	2.20 - 2.20	Grey	Clay	None	None
18590919	3C-K8-V	2.80 - 2.80	Dark Brown	Silty Clay Loam	Vegetation	None
18590838	3C-L5	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18590848	3C-L5	2.00 - 2.00	Dark Brown	Sandy Loam	Stones	None
18590857	3C-L5	3.00 - 3.00	Dark Brown	Sandy Loam	Stones	None
18590750	3C-L6	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18590755	3C-L6	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18590863	3C-L5-V	5.40 - 5.40	Dark Brown	Silt Loam	Vegetation	Stones
18590760	3C-L6-V	3.00 - 3.00	Grey	Clay	Stones	Vegetation
18590797	3C-M5	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18590804	3C-M5	2.00 - 2.00	Dark Brown	Loamy Sand	Stones	Stones
18590813	3C-M5	3.00 - 3.00	Dark Brown	Loamy Sand	Stones	Stones
18590828	3C-M5	4.00 - 4.00	Dark Brown	Sandy Loam	Stones	Vegetation
18590716	3C-M6	0.70 - 0.70	Dark Brown	Silty Clay Loam	None	Vegetation

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

			Colour	Description	Inclusions	Inclusions 2
18590725	3C-M6	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
18590831	3C-M5-V	4.70 - 4.70	Dark Brown	Sandy Clay Loam	None	Stones
18590742	3C-M6-V	3.20 - 3.20	Dark Brown	Loamy Sand	Brick	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B1	3C-B1	3C-B1	3C-B1-V	3C-C1	3C-C1
			Depth (m)	0.50 - 0.50	0.80 - 0.80	1.20 - 1.20	1.65 - 1.65	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18591010	18591016	18591023	18591033	18590869	18590963
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		4.6	5.1	14	30	5.1	4.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	375 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.108		0.0983		0.0703	
Sulphate, Total potential	<0.06 %	TM132		0.324		0.295		0.211	
Soil Organic Matter (SOM)	<0.35 %	TM132		2.59 #	0.934 #	1.95 #	4.14 #	0.391 #	2.28 #
pH	1 pH Units	TM133		11 M	8.25 M	8.38 M	7.62 M	8.87 M	9.42 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.25 M	8.04 M	9.6 M	9.16 M	6.61 M	8.01 M
Cadmium	<0.02 mg/kg	TM181		0.345 M	0.404 M	0.398 M	<0.02 M	0.893 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		75.5 M	7.58 M	12.8 M	34.6 M	34.5 M	99.6 M
Copper	<1.4 mg/kg	TM181		15.8 M	11.3 M	14.8 M	20.2 M	14.3 M	10.2 M
Iron	<1000 mg/kg	TM181		54200 #	17100 #	23800 #	32400 #	60400 #	54900 #
Lead	<0.7 mg/kg	TM181		28.6 M	99.6 M	29.8 M	24.1 M	44.4 M	13.7 M
Manganese	<0.13 mg/kg	TM181		6440 M	541 M	1150 M	195 M	3460 M	6260 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		17.7 M	28.2 M	26.8 M	25.3 M	29.3 M	16.3 M
Selenium	<1 mg/kg	TM181		2.02 #	<1 #	<1 #	<1 #	<10 #	3.26 #
Vanadium	<0.2 mg/kg	TM181		235 #	15 #	27.1 #	53.2 #	67.4 #	259 #
Zinc	<1.9 mg/kg	TM181		121 M	117 M	91 M	106 M	153 M	82.5 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.253		0.104		0.265	
Calcium	<21 mg/kg	TM224		90900		52000		89800	
Magnesium	<8 mg/kg	TM224		16400		13800		8920	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0393 M		0.182 M		0.149 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-C1-V	3C-D1	3C-D1	3C-D1	3C-D1-V	3C-E1
			Depth (m)	1.45 - 1.45	0.30 - 0.30	0.70 - 0.70	1.20 - 1.20	1.65 - 1.65	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590998	18590947	18590974	18590981	18590791	18590904
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	4	7.7	12	17	4.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		205 M	<12 M	<12 M	24.5 M	95.5 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.261		<0.02		
Sulphate, Total potential	<0.06 %	TM132			0.783		0.06		
Soil Organic Matter (SOM)	<0.35 %	TM132		2.31 #	2.72 #	3.91 #	<0.35 #	1.52 #	3.15 #
pH	1 pH Units	TM133		7.38 M	9.07 M	7.89 M	8.33 M	7.17 M	10.9 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 ♦ M	<1 M	<1 ♦ M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 ♦ M	<1 M	<1 ♦ M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.11 M	24.5 M	13.1 M	9.34 M	11.3 M	7.53 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.796 M	<0.02 M	0.456 M	<0.02 M	0.256 M
Chromium	<0.9 mg/kg	TM181		27.6 M	12.9 M	<0.9 M	20.6 M	31.3 M	27.9 M
Copper	<1.4 mg/kg	TM181		17.8 M	13 M	23.4 M	11.4 M	20.4 M	14.4 M
Iron	<1000 mg/kg	TM181		27700 #	30000 #	63700 #	20700 #	29500 #	56900 #
Lead	<0.7 mg/kg	TM181		18.8 M	53.5 M	21.3 M	15.5 M	21.8 M	33.3 M
Manganese	<0.13 mg/kg	TM181		710 M	2260 M	2340 M	1260 M	376 M	3740 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		31.8 M	14.1 M	36.9 M	28 M	36 M	20.7 M
Selenium	<1 mg/kg	TM181		<1 #	1 #	<1 #	<1 #	<1 #	1.03 #
Vanadium	<0.2 mg/kg	TM181		46.7 #	30.1 #	25.5 #	35 #	49 #	71.1 #
Zinc	<1.9 mg/kg	TM181		101 M	206 M	320 M	53.5 M	103 M	147 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.417		<0.02		
Calcium	<21 mg/kg	TM224			118000		18700		
Magnesium	<8 mg/kg	TM224			36500		11900		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.106 M		0.0225 M		
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			N/A				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-E1	3C-E1-V	3C-F1	3C-F1	3C-F1-V	3C-K6
			Depth (m)	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.75 - 1.75	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590924	18590937	18590708	18590733	18590823	18590766
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.4	32	5.7	9	19	12
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	172 M	<12 M	<12 M	23.8 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.101		0.0707			0.271
Sulphate, Total potential	<0.06 %	TM132		0.303		0.212			0.813
Soil Organic Matter (SOM)	<0.35 %	TM132		4.52 #	3.26 #	<0.35 #	1.79 #	1.01 #	27.8 #
pH	1 pH Units	TM133		9.64 M	8.52 M	9.06 M	8.51 M	8.42 M	8.62 M
Cyanide, Total	<1 mg/kg	TM153		<1 ♦ M	<1 M	<1 M	<1 M	<1 M	<1 ♦ M
Cyanide, Free	<1 mg/kg	TM153		<1 ♦ M	<1 M	<1 M	<1 M	<1 M	<1 ♦ M
Arsenic	<0.6 mg/kg	TM181		10.9 M	8.95 M	<6 M	24.1 M	9.06 M	11.2 M
Cadmium	<0.02 mg/kg	TM181		1.05 M	<0.02 M	1.04 M	<0.02 M	<0.02 M	2.79 M
Chromium	<0.9 mg/kg	TM181		35.4 M	26.1 M	86 M	4.81 M	21.6 M	299 M
Copper	<1.4 mg/kg	TM181		18.8 M	13.7 M	19.2 M	17.5 M	8.96 M	37.9 M
Iron	<1000 mg/kg	TM181		74900 #	22900 #	108000 #	41400 #	26300 #	88300 #
Lead	<0.7 mg/kg	TM181		65.3 M	18.7 M	37 M	63.7 M	14.2 M	329 M
Manganese	<0.13 mg/kg	TM181		3920 M	392 M	7190 M	947 M	1040 M	14100 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		34.1 M	29.4 M	33.9 M	44.3 M	26.6 M	25.8 M
Selenium	<1 mg/kg	TM181		<10 #	<1 #	<10 #	<1 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		85 #	43.1 #	82.5 #	19.9 #	38.3 #	229 #
Zinc	<1.9 mg/kg	TM181		149 M	106 M	128 M	195 M	81.6 M	1110 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.205		0.108			0.276
Calcium	<21 mg/kg	TM224		44600		42300			98100
Magnesium	<8 mg/kg	TM224		7470		8220			12700
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0879 M		0.0267 M			0.151 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K6	3C-K7	3C-K7	3C-K8	3C-K8	3C-K6-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.70 - 0.70	1.80 - 1.80	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590774	18590878	18590886	18590898	18590910	18590784
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	15	11	9.5	5.6	24
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	64 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0113 M	0.0117 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.0226 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.288		0.345		
Sulphate, Total potential	<0.06 %	TM132			0.864		1.04		
Soil Organic Matter (SOM)	<0.35 %	TM132		20.3 #	17.6 #	20.2 #	19.3 #	15.2 #	1.41 #
pH	1 pH Units	TM133		12 M	8.8 M	8.82 M	10.6 M	12 M	8.11 M
Cyanide, Total	<1 mg/kg	TM153		<1 ♦ M	<1 M	1.4 M	<1 ♦ M	<1 M	<1 ♦ M
Cyanide, Free	<1 mg/kg	TM153		<1 ♦ M	<1 M	<1 M	<1 ♦ M	<1 M	<1 ♦ M
Arsenic	<0.6 mg/kg	TM181		11.5 M	8.46 M	9.17 M	<6 M	<6 M	13.3 M
Cadmium	<0.02 mg/kg	TM181		0.9 M	0.922 M	<0.02 M	0.704 M	<0.2 M	22.5 M
Chromium	<0.9 mg/kg	TM181		277 M	159 M	84.4 M	539 M	366 M	37 M
Copper	<1.4 mg/kg	TM181		26.6 M	27.1 M	506 M	15.3 M	19.8 M	81.4 M
Iron	<1000 mg/kg	TM181		65900 #	61100 #	66200 #	89000 #	129000 #	36200 #
Lead	<0.7 mg/kg	TM181		58.9 M	62.8 M	43.7 M	36 M	37.4 M	172 M
Manganese	<0.13 mg/kg	TM181		17300 M	15100 M	5690 M	23500 M	21500 M	267 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		19.5 M	27.9 M	15.4 M	10.7 M	11.9 M	40.4 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	3.07 #	<10 #	11.7 #	<1 #
Vanadium	<0.2 mg/kg	TM181		224 #	282 #	99.4 #	404 #	787 #	52.7 #
Zinc	<1.9 mg/kg	TM181		145 M	234 M	118 M	58.6 M	87.5 M	1240 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.447		0.552		
Calcium	<21 mg/kg	TM224			105000		163000		
Magnesium	<8 mg/kg	TM224			9610		17400		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.345 M		0.114 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K7-V	3C-K8-V	3C-L5	3C-L5	3C-L5	3C-L6
			Depth (m)	2.20 - 2.20	2.80 - 2.80	0.50 - 0.50	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590893	18590919	18590838	18590848	18590857	18590750
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		21	24	13	9.1	2.2	9.4
Exchangeable Ammonia as N	<12 mg/kg	TM024		22 M	191 M	<12 M	<12 M	<12 M	19 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0409 M	0.011 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	0.0115 M	<0.01 M	0.0511 M	0.022 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.092 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.185		0.286	
Sulphate, Total potential	<0.06 %	TM132				0.555		0.858	
Soil Organic Matter (SOM)	<0.35 %	TM132		0.895 #	2.12 #	2.9 #	2.26 #	1.19 #	24 #
pH	1 pH Units	TM133		8.33 M	7.48 M	8.46 M	11 M	13 M	10.6 M
Cyanide, Total	<1 mg/kg	TM153		1.25 M	<1 M	<1 M	6.46 ♦ M	1 ♦ M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 ♦ M	<1 ♦ M	<1 M
Arsenic	<0.6 mg/kg	TM181		16.4 M	13.3 M	7.65 M	<6 M	<6 M	397 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	1.34 M	0.492 M	0.886 M	0.856 M
Chromium	<0.9 mg/kg	TM181		38.6 M	36.5 M	30.8 M	359 M	910 M	193 M
Copper	<1.4 mg/kg	TM181		18.6 M	22.7 M	15.6 M	15.2 M	<14 M	144 M
Iron	<1000 mg/kg	TM181		36700 #	32400 #	82200 #	121000 #	165000 #	83600 #
Lead	<0.7 mg/kg	TM181		24 M	20.8 M	91.7 M	197 M	16.2 M	80.6 M
Manganese	<0.13 mg/kg	TM181		445 M	378 M	2840 M	22400 M	64800 M	188000 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		41.5 M	32.8 M	38.6 M	14.5 M	6.16 M	313 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<10 #	12.2 #	16.7 #	51.7 #
Vanadium	<0.2 mg/kg	TM181		58.8 #	57.8 #	77.5 #	324 #	600 #	278 #
Zinc	<1.9 mg/kg	TM181		124 M	127 M	389 M	827 M	52.8 M	205 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.209		0.328	
Calcium	<21 mg/kg	TM224				60600		248000	
Magnesium	<8 mg/kg	TM224				10500		<800	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.0777 M		0.0202 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-L6	3C-L5-V	3C-L6-V	3C-M5	3C-M5	3C-M5
			Depth (m)	1.00 - 1.00	5.40 - 5.40	3.00 - 3.00	0.50 - 0.50	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590755	18590863	18590760	18590797	18590804	18590813
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	17	28	8.7	9.7	6.2
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	46.3 M	172 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.115 M	0.012 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.023 M	0.012 M	<0.01 M	<0.01 M	<0.01 M	0.0107 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.036 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.138 M	0.06 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.371			0.182		0.269
Sulphate, Total potential	<0.06 %	TM132		1.11			0.546		0.807
Soil Organic Matter (SOM)	<0.35 %	TM132		18.4 #	88.8 #	3.26 #	2.48 #	6.09 #	5.48 #
pH	1 pH Units	TM133		10.9 M	7.31 M	7.59 M	8.68 M	10.9 M	12.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 ♦ M	<1 ♦ M	9.2 ♦ M	5.73 ♦ M	<1 ♦ M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Arsenic	<0.6 mg/kg	TM181		7.02 M	5.72 M	13.8 M	18.1 M	<6 M	<6 M
Cadmium	<0.02 mg/kg	TM181		0.455 M	0.136 M	<0.02 M	8.99 M	<0.2 M	0.972 M
Chromium	<0.9 mg/kg	TM181		174 M	3.07 M	34.2 M	153 M	629 M	901 M
Copper	<1.4 mg/kg	TM181		16.3 M	36.6 M	20.2 M	51.9 M	17.2 M	17.2 M
Iron	<1000 mg/kg	TM181		48600 #	4500 #	42300 #	233000 #	184000 #	133000 #
Lead	<0.7 mg/kg	TM181		34.6 M	24.9 M	22.4 M	1390 M	305 M	43.2 M
Manganese	<0.13 mg/kg	TM181		12100 M	162 M	577 M	17300 M	34700 M	29900 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	0.15 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		14.5 M	13 M	30 M	39.6 M	10.3 M	18 M
Selenium	<1 mg/kg	TM181		2.5 #	2.22 #	<1 #	<10 #	17.6 #	10.3 #
Vanadium	<0.2 mg/kg	TM181		123 #	10.9 #	61.4 #	356 #	459 #	503 #
Zinc	<1.9 mg/kg	TM181		129 M	23.5 M	112 M	6160 M	1020 M	165 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.545			0.218		0.491
Calcium	<21 mg/kg	TM224		164000			141000		225000
Magnesium	<8 mg/kg	TM224		11400			3490		12500
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.205 M			0.0782 M		0.0158 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							0.0409 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							N/A
Asbestos Quantification - Total - %	<0.001 %	TM304							0.0411 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			3C-M5	4.00 - 4.00	Soil/Solid (S)	23/10/2018	00:00	24/10/2018	181024-39	18590828	
			3C-M6	0.70 - 0.70	Soil/Solid (S)	23/10/2018	00:00	24/10/2018	181024-39	18590716	
			3C-M6	1.50 - 1.50	Soil/Solid (S)	23/10/2018	00:00	24/10/2018	181024-39	18590725	
			3C-M5-V	4.70 - 4.70	Soil/Solid (S)	23/10/2018	00:00	24/10/2018	181024-39	18590831	
			3C-M6-V	3.20 - 3.20	Soil/Solid (S)	23/10/2018	00:00	24/10/2018	181024-39	18590742	
Moisture Content Ratio (% of as received sample)	%	PM024	17	25	12	29	15				
Exchangeable Ammonia as N	<12 mg/kg	TM024	34.7 M	152 M	<12 M	228 M	<12 M				
Phenol	<0.01 mg/kg	TM062 (S)	0.0121 M	<0.01 M	0.0113 M	<0.01 M	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)	0.0484 M	<0.01 M	0.0113 M	<0.01 M	<0.01 M				
Xylenols	<0.015 mg/kg	TM062 (S)	0.0847 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	0.145 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M				
Sulphur, Total	<0.02 %	TM132		0.0331							
Sulphate, Total potential	<0.06 %	TM132		0.0993							
Soil Organic Matter (SOM)	<0.35 %	TM132	10.4 #	2.41 #	5.28 #	6.29 #	32.9 #				
pH	1 pH Units	TM133	10.1 M	7.98 M	10.8 M	7.92 M	8.64 M				
Cyanide, Total	<1 mg/kg	TM153	<1 ♦ M	<1 M	<1 M	<1 ♦ M	<1 M				
Cyanide, Free	<1 mg/kg	TM153	<1 ♦ M	<1 M	<1 M	<1 ♦ M	<1 M				
Arsenic	<0.6 mg/kg	TM181	8.13 M	10.6 M	<6 M	18.3 M	16.8 M				
Cadmium	<0.02 mg/kg	TM181	0.867 M	0.289 M	<0.2 M	0.356 M	3.46 M				
Chromium	<0.9 mg/kg	TM181	290 M	40.5 M	641 M	34 M	38.8 M				
Copper	<1.4 mg/kg	TM181	20.4 M	22.8 M	16.8 M	22.4 M	26.7 M				
Iron	<1000 mg/kg	TM181	61800 #	29800 #	126000 #	29200 #	99100 #				
Lead	<0.7 mg/kg	TM181	58.5 M	28.7 M	43.8 M	37.8 M	762 M				
Manganese	<0.13 mg/kg	TM181	21000 M	509 M	28300 M	283 M	5290 M				
Mercury	<0.14 mg/kg	TM181	<1.4 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M				
Nickel	<0.2 mg/kg	TM181	20.6 M	46.2 M	16.9 M	28.3 M	20.7 M				
Selenium	<1 mg/kg	TM181	<10 #	<1 #	16 #	<1 #	1.52 #				
Vanadium	<0.2 mg/kg	TM181	282 #	62.1 #	683 #	63.3 #	73.9 #				
Zinc	<1.9 mg/kg	TM181	230 M	121 M	150 M	120 M	2780 M				
Sulphate, acid soluble (total)	<0.02 %	TM221		0.0336							
Calcium	<21 mg/kg	TM224		6180							
Magnesium	<8 mg/kg	TM224		11400							
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0553 M							

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B1	3C-B1	3C-B1	3C-B1-V	3C-C1	3C-C1
			Depth (m)	0.50 - 0.50	0.80 - 0.80	1.20 - 1.20	1.65 - 1.65	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18591010	18591016	18591023	18591033	18590869	18590963
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.1	99.5	90.2	86.9	94.7	93.2
Acenaphthene-d10 % recovery**	%	TM218		90.5	98.3	88.5	88.4	94.5	93.2
Phenanthrene-d10 % recovery**	%	TM218		88.5	103	85.2	86.4	93.3	92.8
Chrysene-d12 % recovery**	%	TM218		87.1	81	80.2	84.4	91.9	91.9
Perylene-d12 % recovery**	%	TM218		80.9	75.9	78.4	83.1	87.5	88.2
Naphthalene	<0.009 mg/kg	TM218		0.358 M	0.0159 M	0.0871 M	<0.009 M	0.671 M	0.655 M
Acenaphthylene	<0.012 mg/kg	TM218		0.127 M	<0.012 M	0.0172 M	<0.012 M	0.226 M	0.208 M
Acenaphthene	<0.008 mg/kg	TM218		0.0285 M	<0.008 M	<0.008 M	<0.008 M	0.0424 M	0.0446 M
Fluorene	<0.01 mg/kg	TM218		0.0778 M	<0.01 M	0.0195 M	<0.01 M	0.193 M	0.206 M
Phenanthrene	<0.015 mg/kg	TM218		0.945 M	0.0459 M	0.186 M	<0.015 M	1.69 M	1.78 M
Anthracene	<0.016 mg/kg	TM218		0.227 M	<0.016 M	0.0413 M	<0.016 M	0.454 M	0.425 M
Fluoranthene	<0.017 mg/kg	TM218		1.5 M	0.0483 M	0.207 M	<0.017 M	2.14 M	2.13 M
Pyrene	<0.015 mg/kg	TM218		1.12 M	0.0356 M	0.15 M	<0.015 M	1.52 M	1.5 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.646 M	0.023 M	0.0622 M	<0.014 M	0.872 M	0.806 M
Chrysene	<0.01 mg/kg	TM218		0.641 M	0.0229 M	0.0703 M	<0.01 M	0.795 M	0.744 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.752 M	0.0328 M	0.0835 M	<0.015 M	0.86 M	0.956 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.325 M	<0.014 M	0.0256 M	<0.014 M	0.413 M	0.302 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.571 M	0.0163 M	0.0544 M	<0.015 M	0.727 M	0.649 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.507 M	0.019 M	0.0453 M	<0.018 M	0.645 M	0.531 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.116 M	<0.023 M	<0.023 M	<0.023 M	0.137 M	0.124 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.524 M	<0.024 M	0.0474 M	<0.024 M	0.612 M	0.554 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		8.47	0.26	1.1	<0.118	12	11.6

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-C1-V	3C-D1	3C-D1	3C-D1	3C-D1-V	3C-E1
			Depth (m)	1.45 - 1.45	0.30 - 0.30	0.70 - 0.70	1.20 - 1.20	1.65 - 1.65	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590998	18590947	18590974	18590981	18590791	18590904
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.2	90.2	82.7	94.2	85.1	85.9
Acenaphthene-d10 % recovery**	%	TM218		89	88.8	81.4	92.6	89.6	92.6
Phenanthrene-d10 % recovery**	%	TM218		87.8	87.2	88.9	89.6	97.2	96.8
Chrysene-d12 % recovery**	%	TM218		85.9	84.1	72.1	86.5	105	104
Perylene-d12 % recovery**	%	TM218		76.6	79.4	71.7	85.4	101	91.4
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	0.354 M	0.0376 M	<0.009 M	<0.009 M	0.878 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.102 M	<0.012 M	<0.012 M	<0.012 M	0.301 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0219 M	<0.008 M	<0.008 M	<0.008 M	0.0596 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0895 M	<0.01 M	<0.01 M	<0.01 M	0.297 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	0.823 M	0.099 M	<0.015 M	<0.015 M	2.41 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.213 M	0.0234 M	<0.016 M	<0.016 M	0.685 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	1.1 M	0.125 M	<0.017 M	<0.017 M	3.49 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	0.79 M	0.0793 M	<0.015 M	<0.015 M	2.54 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	0.429 M	0.0487 M	<0.014 M	<0.014 M	1.61 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	0.398 M	0.0492 M	<0.01 M	<0.01 M	1.51 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	0.453 M	0.0779 M	<0.015 M	<0.015 M	2.07 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.182 M	0.0244 M	<0.014 M	<0.014 M	0.729 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	0.363 M	0.0417 M	<0.015 M	<0.015 M	1.34 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.295 M	0.0507 M	<0.018 M	<0.018 M	1.22 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.0632 M	<0.023 M	<0.023 M	<0.023 M	0.246 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.312 M	0.0329 M	<0.024 M	<0.024 M	0.91 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	5.99	0.69	<0.118	<0.118	20.3

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-E1	3C-E1-V	3C-F1	3C-F1	3C-F1-V	3C-K6
			Depth (m)	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.75 - 1.75	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590924	18590937	18590708	18590733	18590823	18590766
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.1	87.2	93.1	101	86.4	94.6
Acenaphthene-d10 % recovery**	%	TM218		90.9	86.9	91.5	84	91.7	89.7
Phenanthrene-d10 % recovery**	%	TM218		89.8	85.7	86.9	88.9	98.2	88
Chrysene-d12 % recovery**	%	TM218		85	86.1	81.2	83.1	109	83.8
Perylene-d12 % recovery**	%	TM218		79.2	84	76.6	81.5	100	76.5
Naphthalene	<0.009 mg/kg	TM218		0.487 M	<0.009 M	0.305 M	0.0228 M	<0.009 M	0.318 M
Acenaphthylene	<0.012 mg/kg	TM218		0.175 M	<0.012 M	0.0869 M	<0.012 M	<0.012 M	0.0985 M
Acenaphthene	<0.008 mg/kg	TM218		0.0284 M	<0.008 M	0.0164 M	<0.008 M	<0.008 M	0.0209 M
Fluorene	<0.01 mg/kg	TM218		0.138 M	<0.01 M	0.078 M	<0.01 M	<0.01 M	0.0789 M
Phenanthrene	<0.015 mg/kg	TM218		1.11 M	0.0587 M	0.77 M	0.0408 M	<0.015 M	0.738 M
Anthracene	<0.016 mg/kg	TM218		0.326 M	<0.016 M	0.222 M	<0.016 M	<0.016 M	0.15 M
Fluoranthene	<0.017 mg/kg	TM218		1.57 M	0.135 M	1.07 M	0.046 M	<0.017 M	1.15 M
Pyrene	<0.015 mg/kg	TM218		1.12 M	0.112 M	0.743 M	0.0349 M	<0.015 M	0.856 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.586 M	0.0572 M	0.399 M	0.0213 M	<0.014 M	0.457 M
Chrysene	<0.01 mg/kg	TM218		0.565 M	0.064 M	0.36 M	0.023 M	<0.01 M	0.437 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.602 M	0.107 M	0.306 M	0.0246 M	<0.015 M	0.34 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.303 M	0.0281 M	0.171 M	<0.014 M	<0.014 M	0.239 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.504 M	0.0685 M	0.317 M	<0.015 M	<0.015 M	0.411 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.426 M	0.0796 M	0.258 M	<0.018 M	<0.018 M	0.283 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.087 M	<0.023 M	0.0623 M	<0.023 M	<0.023 M	0.0728 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.424 M	0.0862 M	0.25 M	<0.024 M	<0.024 M	0.32 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		8.44	0.796	5.42	0.213	<0.118	5.97

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K6	3C-K7	3C-K7	3C-K8	3C-K8	3C-K6-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.70 - 0.70	1.80 - 1.80	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590774	18590878	18590886	18590898	18590910	18590784
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		82.2	74.8	86.8	88.7	86.4	79.1
Acenaphthene-d10 % recovery**	%	TM218		84	77.9	83.4	87.9	84.9	84.2
Phenanthrene-d10 % recovery**	%	TM218		87	81.1	84.9	84.9	82.2	88.4
Chrysene-d12 % recovery**	%	TM218		82	76.4	77.3	78.2	77.5	75.7
Perylene-d12 % recovery**	%	TM218		70.4	74.2	77.2	70.6	75.3	70.7
Naphthalene	<0.009 mg/kg	TM218		0.131 M	7.04 M	2.39 M	1.72 M	0.494 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.035 M	8.13 M	3.44 M	0.267 M	0.104 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.472 M	0.206 M	0.0565 M	0.0462 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0258 M	12.9 M	1.45 M	0.18 M	0.0834 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.756 M	45.2 M	11.7 M	2.16 M	1.05 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.0827 M	118 M	5.72 M	0.43 M	0.238 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.84 M	91 M	42.2 M	2.44 M	2.01 M	0.0291 M
Pyrene	<0.015 mg/kg	TM218		0.534 M	61.2 M	32 M	1.81 M	1.75 M	0.0206 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.215 M	38.7 M	21.8 M	0.952 M	0.91 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.287 M	37.3 M	19 M	0.944 M	0.95 M	0.0163 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.277 M	50.6 M	32 M	0.787 M	1.12 M	0.0212 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0889 M	18 M	8.89 M	0.36 M	0.487 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.129 M	32.8 M	19.4 M	0.723 M	0.894 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.161 M	31.5 M	17.2 M	0.561 M	0.744 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0285 M	5.89 M	3.71 M	0.138 M	0.148 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.104 M	20.7 M	16 M	0.555 M	0.789 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.7	580	237	14.1	11.8	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K7-V	3C-K8-V	3C-L5	3C-L5	3C-L5	3C-L6
			Depth (m)	2.20 - 2.20	2.80 - 2.80	0.50 - 0.50	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590893	18590919	18590838	18590848	18590857	18590750
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85.1	79.9	88.3	88.7	90.8	94
Acenaphthene-d10 % recovery**	%	TM218		83.6	81.8	85.7	93.4	89.5	88.3
Phenanthrene-d10 % recovery**	%	TM218		79.5	86.8	85.7	100	88.6	87.5
Chrysene-d12 % recovery**	%	TM218		73.1	74.7	80.4	93.9	85	75.4
Perylene-d12 % recovery**	%	TM218		71.4	70.8	74.1	80.2	82.4	71.7
Naphthalene	<0.009 mg/kg	TM218		0.0828 M	<0.009 M	0.047 M	0.0693 M	0.98 M	11.9 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0254 M	<0.012 M	0.0168 M	0.015 M	0.238 M	3.59 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	0.00923 M	0.0102 M	0.0591 M	0.416 M
Fluorene	<0.01 mg/kg	TM218		0.0177 M	<0.01 M	0.0126 M	0.0157 M	0.243 M	2.8 M
Phenanthrene	<0.015 mg/kg	TM218		0.105 M	<0.015 M	0.107 M	0.207 M	1.91 M	15 M
Anthracene	<0.016 mg/kg	TM218		0.0386 M	<0.016 M	0.0367 M	0.0424 M	0.269 M	5.25 M
Fluoranthene	<0.017 mg/kg	TM218		0.206 M	0.0402 M	0.237 M	0.235 M	1.99 M	29.3 M
Pyrene	<0.015 mg/kg	TM218		0.153 M	0.0288 M	0.191 M	0.214 M	1.35 M	21.3 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0738 M	0.0234 M	0.131 M	0.129 M	0.739 M	10.5 M
Chrysene	<0.01 mg/kg	TM218		0.0639 M	0.0174 M	0.139 M	0.174 M	0.697 M	8.76 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0589 M	0.0298 M	0.167 M	0.176 M	0.584 M	11.1 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0312 M	<0.014 M	0.0824 M	0.0676 M	0.27 M	4.73 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0623 M	<0.015 M	0.143 M	0.113 M	0.525 M	9.23 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0502 M	<0.018 M	0.13 M	0.113 M	0.409 M	6.52 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	0.106 M	1.35 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0477 M	<0.024 M	0.138 M	0.121 M	0.411 M	6.77 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.02	0.14	1.59	1.7	10.8	149

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-L6	3C-L5-V	3C-L6-V	3C-M5	3C-M5	3C-M5
			Depth (m)	1.00 - 1.00	5.40 - 5.40	3.00 - 3.00	0.50 - 0.50	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590755	18590863	18590760	18590797	18590804	18590813
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		82.8	88.6	83.4	89.9	87.6	90.3
Acenaphthene-d10 % recovery**	%	TM218		82.8	92.6	82.1	93.3	87.6	87.8
Phenanthrene-d10 % recovery**	%	TM218		84.9	94.2	82.9	97.2	87.2	86.7
Chrysene-d12 % recovery**	%	TM218		77.9	82.6	82.4	86.3	84.2	86.5
Perylene-d12 % recovery**	%	TM218		72.7	52	75.5	72.4	77.4	83
Naphthalene	<0.009 mg/kg	TM218		6.87 M	0.29 M	<0.009 M	0.135 M	0.418 M	0.102 M
Acenaphthylene	<0.012 mg/kg	TM218		1.34 M	<0.012 M	<0.012 M	0.107 M	0.0318 M	0.0268 M
Acenaphthene	<0.008 mg/kg	TM218		0.263 M	0.015 M	<0.008 M	<0.008 M	0.194 M	0.0241 M
Fluorene	<0.01 mg/kg	TM218		1.21 M	0.114 M	<0.01 M	0.0186 M	0.151 M	0.0285 M
Phenanthrene	<0.015 mg/kg	TM218		6.52 M	0.597 M	<0.015 M	0.206 M	1.72 M	0.564 M
Anthracene	<0.016 mg/kg	TM218		2 M	<0.016 M	<0.016 M	0.0742 M	0.404 M	0.0744 M
Fluoranthene	<0.017 mg/kg	TM218		10.2 M	0.0952 M	0.0277 M	0.396 M	2.43 M	0.763 M
Pyrene	<0.015 mg/kg	TM218		7.55 M	0.0888 M	<0.015 M	0.349 M	2.21 M	0.677 M
Benz(a)anthracene	<0.014 mg/kg	TM218		4.15 M	0.0347 M	<0.014 M	0.26 M	1.36 M	0.47 M
Chrysene	<0.01 mg/kg	TM218		3.55 M	0.172 M	<0.01 M	0.265 M	1.29 M	0.537 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		3.51 M	0.0702 M	<0.015 M	0.39 M	1.29 M	0.564 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.48 M	<0.014 M	<0.014 M	0.157 M	0.632 M	0.267 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		3.54 M	0.0265 M	<0.015 M	0.362 M	1.5 M	0.557 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		2.86 M	<0.018 M	<0.018 M	0.409 M	0.993 M	0.452 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.669 M	<0.023 M	<0.023 M	0.0663 M	0.161 M	0.0935 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.78 M	0.03 M	<0.024 M	0.428 M	0.963 M	0.463 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		58.5	1.53	<0.118	3.62	15.8	5.66

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-M5	3C-M6	3C-M6	3C-M5-V	3C-M6-V
			Depth (m)	4.00 - 4.00	0.70 - 0.70	1.50 - 1.50	4.70 - 4.70	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590828	18590716	18590725	18590831	18590742
			AGS Reference					
Naphthalene-d8 % recovery**	%	TM218		91.4	86.9	78.3	83.8	86.9
Acenaphthene-d10 % recovery**	%	TM218		96	88.8	82	84.4	81.4
Phenanthrene-d10 % recovery**	%	TM218		102	89.6	86.1	81	84.8
Chrysene-d12 % recovery**	%	TM218		99.6	75.6	78	76.7	78.7
Perylene-d12 % recovery**	%	TM218		88.3	72.3	70.8	72.6	79.4
Naphthalene	<0.009 mg/kg	TM218		0.197 M	<0.009 M	2 M	0.0132 M	4.24 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0426 M	<0.012 M	0.379 M	<0.012 M	2.81 M
Acenaphthene	<0.008 mg/kg	TM218		0.0177 M	<0.008 M	0.0987 M	<0.008 M	0.487 M
Fluorene	<0.01 mg/kg	TM218		0.071 M	<0.01 M	0.337 M	<0.01 M	0.903 M
Phenanthrene	<0.015 mg/kg	TM218		0.545 M	0.0217 M	2.08 M	0.0506 M	6.54 M
Anthracene	<0.016 mg/kg	TM218		0.0659 M	<0.016 M	0.568 M	<0.016 M	2.85 M
Fluoranthene	<0.017 mg/kg	TM218		0.454 M	0.0333 M	4.47 M	0.0887 M	20.8 M
Pyrene	<0.015 mg/kg	TM218		0.39 M	0.0245 M	3.63 M	0.0667 M	16.3 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.262 M	<0.014 M	2.09 M	0.039 M	11.8 M
Chrysene	<0.01 mg/kg	TM218		0.324 M	0.0147 M	1.81 M	0.0412 M	10.7 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.325 M	0.0258 M	3.13 M	0.0496 M	11.3 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.155 M	<0.014 M	1.06 M	0.0205 M	6.32 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.303 M	<0.015 M	1.98 M	0.0375 M	13.6 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.229 M	<0.018 M	1.87 M	0.0334 M	12.8 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0472 M	<0.023 M	0.305 M	<0.023 M	2.82 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.215 M	<0.024 M	1.26 M	0.0428 M	12.7 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.64	0.12	27	0.483	137

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B1	3C-B1	3C-B1	3C-B1-V	3C-C1	3C-C1
			Depth (m)	0.50 - 0.50	0.80 - 0.80	1.20 - 1.20	1.65 - 1.65	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18591010	18591016	18591023	18591033	18590869	18590963
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		70.6	89	89.9	97	98	86.7
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.11	<0.1	<0.1	<0.1	5.68	2.96
Aliphatics >C16-C21	<0.1 mg/kg	TM173		5.16	<0.1	1.1	<0.1	24.6	9.5
Aliphatics >C21-C35	<0.1 mg/kg	TM173		33.8	<0.1	7.85	3.73	93.4	35.4
Aliphatics >C35-C44	<0.1 mg/kg	TM173		11.9	<0.1	<0.1	<0.1	33.2	12.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		51.9	<0.1	8.95	3.73	157	60.5
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.94	<0.1	<0.1	<0.1	3.23	3.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.01	<0.1	2.01	<0.1	15.4	14.4
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		30.7	<0.1	11.8	14.6	59	37.2
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		11	<0.1	1.41	0.944	27.7	12.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.67	<0.1	<0.1	<0.1	9.72	4.21
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		52.6	<0.1	15.2	15.5	105	67.2
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		105	<0.1	24.2	19.3	262	128

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-C1-V	3C-D1	3C-D1	3C-D1	3C-D1-V	3C-E1
			Depth (m)	1.45 - 1.45	0.30 - 0.30	0.70 - 0.70	1.20 - 1.20	1.65 - 1.65	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590998	18590947	18590974	18590981	18590791	18590904
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		94	90.2	94	92	112	92.5
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	1.49	<0.1	<0.1	<0.1	3.36
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	5.78	2.97	<0.1	<0.1	12
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	33.7	8.1	<0.1	<0.1	70.9
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	12.9	2.46	<0.1	<0.1	26.2
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	53.9	13.5	<0.1	<0.1	113
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	2.45	<0.1	<0.1	<0.1	4.89
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	9.67	1.33	<0.1	<0.1	23.6
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		3.05	33.5	5.53	<0.1	<0.1	74
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1	13.2	1.39	<0.1	<0.1	28.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	4.75	<0.1	<0.1	<0.1	9.88
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		3.05	58.9	8.25	<0.1	<0.1	131
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		3.05	113	21.8	<0.1	<0.1	243

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-E1	3C-E1-V	3C-F1	3C-F1	3C-F1-V	3C-K6
			Depth (m)	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.75 - 1.75	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590924	18590937	18590708	18590733	18590823	18590766
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		122	98.4	93.8	85	100	32
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.94	<0.1	1.22	<0.1	<0.1	1.81
Aliphatics >C16-C21	<0.1 mg/kg	TM173		6.47	<0.1	3.89	2.82	<0.1	5.63
Aliphatics >C21-C35	<0.1 mg/kg	TM173		36.3	1.45	17.7	12.3	<0.1	18.8
Aliphatics >C35-C44	<0.1 mg/kg	TM173		13.1	<0.1	5.63	5.46	<0.1	2.81
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		57.8	1.45	28.4	20.5	<0.1	29.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.57	<0.1	1.27	<0.1	<0.1	2.41
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		10.8	<0.1	5.76	0.9	<0.1	8.14
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		37.4	<0.1	17.8	5.41	<0.1	24.8
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		15.2	<0.1	4.69	2.02	<0.1	6.65
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		5.39	<0.1	1.32	<0.1	<0.1	2.33
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		66	<0.1	29.5	8.33	<0.1	42
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		124	1.45	58	28.9	<0.1	71.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K6	3C-K7	3C-K7	3C-K8	3C-K8	3C-K6-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.70 - 0.70	1.80 - 1.80	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590774	18590878	18590886	18590898	18590910	18590784
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		16	88.7	29.3	21.9	71.8	97.4
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 #	<0.2 M	<0.2 #	0.36 #	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.0234	<0.02	0.0902	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.0234	<0.02	0.0704	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	0.0445	<0.02	0.0726	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.767	6.3	3.11	12.2	3.4	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		4.92	40.1	18.4	27.4	10.5	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		28.1	83.5	39.1	68.3	43.1	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		5.38	20.6	9.18	11.1	8.04	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		39.2	150	69.8	119	65.1	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0473	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	0.0293	<0.02	0.0484	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.26	28.8	10.6	15.1	4.51	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		7.67	296	127	42.2	18.2	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		27.8	718	428	93	70.5	3.19
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		8.08	177	101	20.9	16.7	0.607
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		2.73	43.4	25.2	5.84	4.75	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		44.8	1220	667	171	110	3.8
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		84	1370	737	291	175	3.8

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K7-V	3C-K8-V	3C-L5	3C-L5	3C-L5	3C-L6
			Depth (m)	2.20 - 2.20	2.80 - 2.80	0.50 - 0.50	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590893	18590919	18590838	18590848	18590857	18590750
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		99.4	94	146	78	66.8	64.4
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.2 M	<0.2 #	<0.2 M	0.311 #	0.675 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0245	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0705	0.088
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0531	0.109
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0378	0.229
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	0.411	0.932	1.79	8.58
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1	5.16	11	8.11	29.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	<0.1	30.2	50.5	38.2	54.6
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	5.63	11.1	8.22	14
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	<0.1	41.4	73.6	56.4	106
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0204	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0429	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0358	0.0726
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	0.0256	0.153
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.359	<0.1	<0.1	1.94	3.33	118
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		3.61	<0.1	2.36	8.81	10.8	512
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		11.3	6.36	26.6	40.6	35.7	632
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.22	<0.1	7.62	11.3	7.21	114
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	2.35	3.56	1.82	26.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		16.5	6.36	36.6	62.6	57	1370
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		16.5	6.36	78	136	114	1480

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-L6	3C-L5-V	3C-L6-V	3C-M5	3C-M5	3C-M5
			Depth (m)	1.00 - 1.00	5.40 - 5.40	3.00 - 3.00	0.50 - 0.50	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590755	18590863	18590760	18590797	18590804	18590813
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		24.6	2.5	92.1	85	13.7	69.6
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.407 #	<0.2 #	<0.2 M	<0.2 M	<0.2 #	0.392 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0966	<0.02	<0.02	<0.02	<0.02	0.0757
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0644	<0.02	<0.02	<0.02	<0.02	0.0746
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.104	<0.02	<0.02	<0.02	<0.02	0.08
Aliphatics >C12-C16	<0.1 mg/kg	TM173		7.81	6.04	<0.1	0.444	2.56	1.4
Aliphatics >C16-C21	<0.1 mg/kg	TM173		55.8	12.1	<0.1	11.1	11	7.04
Aliphatics >C21-C35	<0.1 mg/kg	TM173		72.7	35.7	<0.1	50.6	57.5	48.2
Aliphatics >C35-C44	<0.1 mg/kg	TM173		28.8	8.73	<0.1	7.11	9.41	12.6
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		165	62.6	<0.1	69.3	80.4	69.2
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	0.0235
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0437	<0.02	<0.02	<0.02	<0.02	0.0501
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.069	<0.02	<0.02	<0.02	<0.02	0.0533
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		14.4	7.69	<0.1	0.81	4.32	1.67
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		72.6	14.8	<0.1	7.26	12.4	8.64
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		142	55.2	5.28	35.3	47.8	42.4
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		46.1	9.21	<0.1	8.24	10.7	12.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		15.1	2.76	<0.1	2.15	3.06	3.77
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		275	86.9	5.28	51.6	75.3	64.9
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		440	150	5.28	121	156	134

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-M5	3C-M6	3C-M6	3C-M5-V	3C-M6-V
			Depth (m)	4.00 - 4.00	0.70 - 0.70	1.50 - 1.50	4.70 - 4.70	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590828	18590716	18590725	18590831	18590742
			AGS Reference					
GRO Surrogate % recovery**	%	TM089		24	92.6	39.9	112	59.2
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 #	<0.2 M	<0.2 #	<0.2 M	<0.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0278	<0.02	0.0509	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	0.0328	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	0.0452	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		7.23	<0.1	3.98	<0.1	9.19
Aliphatics >C16-C21	<0.1 mg/kg	TM173		15.1	<0.1	17	<0.1	72.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		52.2	<0.1	36.3	4.87	99
Aliphatics >C35-C44	<0.1 mg/kg	TM173		12.5	<0.1	11.1	<0.1	15.2
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		87	<0.1	68.2	4.87	196
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.0206	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	0.0215	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	0.0305	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		5.41	<0.1	5.58	3.38	19
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		13.1	<0.1	27.7	5.78	174
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		52.4	6.37	76	29	553
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		12	0.431	20.7	3.17	139
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.34	<0.1	5.73	<0.1	33.4
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		82.9	6.8	130	41.4	886
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		170	6.8	198	46.2	1080

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-B1	3C-B1	3C-B1	3C-B1-V	3C-C1	3C-C1
			Depth (m)	0.50 - 0.50	0.80 - 0.80	1.20 - 1.20	1.65 - 1.65	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18591010	18591016	18591023	18591033	18590869	18590963
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	108	116	112	113	111
Toluene-d8**	%	TM116		96	98	98.3	101	98.1	98.6
4-Bromofluorobenzene**	%	TM116		81.6	103	89.5	92.7	85.2	86.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-C1-V	3C-D1	3C-D1	3C-D1	3C-D1-V	3C-E1
			Depth (m)	1.45 - 1.45	0.30 - 0.30	0.70 - 0.70	1.20 - 1.20	1.65 - 1.65	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590998	18590947	18590974	18590981	18590791	18590904
			AGS Reference						
Dibromofluoromethane**	%	TM116		120	129	114	146	115	112
Toluene-d8**	%	TM116		101	98.8	99.9	100	99.6	97.9
4-Bromofluorobenzene**	%	TM116		94.7	89	90.7	97.8	92.9	82.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	0.224 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-E1	3C-E1-V	3C-F1	3C-F1	3C-F1-V	3C-K6
			Depth (m)	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.75 - 1.75	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590924	18590937	18590708	18590733	18590823	18590766
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	109	126	108	115	94.4
Toluene-d8**	%	TM116		96.6	99.3	98.3	99.5	99.5	93
4-Bromofluorobenzene**	%	TM116		82.5	88.7	84.7	90.6	94.2	71.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.16 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K6	3C-K7	3C-K7	3C-K8	3C-K8	3C-K6-V
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.70 - 0.70	1.80 - 1.80	2.50 - 2.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590774	18590878	18590886	18590898	18590910	18590784
			AGS Reference						
Dibromofluoromethane**	%	TM116		97.3	104	88.4	85.2	99.5	111
Toluene-d8**	%	TM116		92.8	98.1	89.1	87.8	94.6	101
4-Bromofluorobenzene**	%	TM116		79.2	81.6	79.7	73.3	73.3	93.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.2 M	<0.1 M	<0.2 M	<0.2 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.18 M	<0.09 M	<0.18 M	<0.18 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.14 M	<0.07 M	<0.14 M	<0.14 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.08 M	<0.04 M	<0.08 M	<0.08 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.2 #	<0.1 #	<0.2 #	<0.2 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.2 M	<0.1 M	<0.2 M	<0.2 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.26 M	0.638 M	<0.26 M	0.34 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.8	<0.4	<0.8	<0.8	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K7-V	3C-K8-V	3C-L5	3C-L5	3C-L5	3C-L6
			Depth (m)	2.20 - 2.20	2.80 - 2.80	0.50 - 0.50	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590893	18590919	18590838	18590848	18590857	18590750
			AGS Reference						
Dibromofluoromethane**	%	TM116		105	112	115	117	102	95.7
Toluene-d8**	%	TM116		97.1	98.8	99.3	98.3	91.6	95.6
4-Bromofluorobenzene**	%	TM116		97.7	106	90	89.3	73.7	76.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	0.139 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	1.74 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-L6	3C-L5-V	3C-L6-V	3C-M5	3C-M5	3C-M5
			Depth (m)	1.00 - 1.00	5.40 - 5.40	3.00 - 3.00	0.50 - 0.50	2.00 - 2.00	3.00 - 3.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590755	18590863	18590760	18590797	18590804	18590813
			AGS Reference						
Dibromofluoromethane**	%	TM116		81.5	100	113	107	103	109
Toluene-d8**	%	TM116		94.1	93.5	101	100	98.8	95.4
4-Bromofluorobenzene**	%	TM116		70.2	83.1	94.4	90.4	103	79.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<2 M	<0.1 M	<0.1 M	<2 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<1.8 M	<0.09 M	<0.09 M	<1.8 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<1.4 M	<0.07 M	<0.07 M	<1.4 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.8 M	<0.04 M	<0.04 M	<0.8 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<2 #	<0.1 #	<0.1 #	<2 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<2 M	<0.1 M	<0.1 M	<2 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		18.4 M	<2.6 M	<0.13 M	<0.13 M	<2.6 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<8	<0.4	<0.4	<8	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-M5	3C-M6	3C-M6	3C-M5-V	3C-M6-V
			Depth (m)	4.00 - 4.00	0.70 - 0.70	1.50 - 1.50	4.70 - 4.70	3.20 - 3.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	23/10/2018	23/10/2018	23/10/2018	23/10/2018	23/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00
			Date Received	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			SDG Ref	181024-39	181024-39	181024-39	181024-39	181024-39
			Lab Sample No.(s)	18590828	18590716	18590725	18590831	18590742
			AGS Reference					
Dibromofluoromethane**	%	TM116		105	120	96.7	116	107
Toluene-d8**	%	TM116		98	100	96.8	99.5	97
4-Bromofluorobenzene**	%	TM116		101	91.1	87.9	93.9	78.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<2 M	<0.1 M	<2 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<1.8 M	<0.09 M	<1.8 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<1.4 M	<0.07 M	<1.4 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.8 M	<0.04 M	<0.8 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<2 #	<0.1 #	<2 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<2 M	<0.1 M	<2 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<2.6 M	<0.13 M	4.32 M	<0.13 M	0.166 M
Sum of BTEX	<0.04 mg/kg	TM116		<8	<0.4	<8	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-B1 0.50 - 0.50 SOLID 23/10/2018 00:00:00 24/10/2018 21:12:03 181024-39 18591010 TM048	06/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-B1 1.20 - 1.20 SOLID 23/10/2018 00:00:00 24/10/2018 20:51:08 181024-39 18591023 TM048	06/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-C1 0.50 - 0.50 SOLID 23/10/2018 00:00:00 30/10/2018 20:46:14 181024-39 18590869 TM048	06/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-D1 0.30 - 0.30 SOLID 23/10/2018 00:00:00 25/10/2018 08:52:24 181024-39 18590947 TM048	06/11/2018	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-D1 1.20 - 1.20 SOLID 23/10/2018 00:00:00 25/10/2018 07:39:45 181024-39 18590981 TM048	06/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-E1 1.00 - 1.00 SOLID 23/10/2018 00:00:00 25/10/2018 08:37:38 181024-39 18590924 TM048	06/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181024-39 **Client Reference:** **Report Number:** 480803
Location: Llanwern **Order Number:** LLA495 **Superseded Report:** 480797

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-F1 0.30 - 0.30 SOLID 23/10/2018 00:00:00 25/10/2018 07:36:26 181024-39 18590708 TM048	06/11/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-K6 0.50 - 0.50 SOLID 23/10/2018 00:00:00 25/10/2018 07:50:39 181024-39 18590766 TM048	06/11/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-K7 0.50 - 0.50 SOLID 23/10/2018 00:00:00 31/10/2018 20:50:57 181024-39 18590878 TM048	06/11/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-K8 0.70 - 0.70 SOLID 23/10/2018 00:00:00 31/10/2018 20:49:02 181024-39 18590898 TM048	06/11/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-L5 0.50 - 0.50 SOLID 23/10/2018 00:00:00 25/10/2018 07:53:54 181024-39 18590838 TM048	06/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-L5 3.00 - 3.00 SOLID 23/10/2018 00:00:00 30/10/2018 20:47:44 181024-39 18590857 TM048	06/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181024-39 **Client Reference:** **Report Number:** 480803
Location: Llanwern **Order Number:** LLA495 **Superseded Report:** 480797

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-L6 1.00 - 1.00 SOLID 23/10/2018 00:00:00 25/10/2018 08:40:39 181024-39 18590755 TM048	06/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-M5 0.50 - 0.50 SOLID 23/10/2018 00:00:00 25/10/2018 08:57:53 181024-39 18590797 TM048	06/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-M5 3.00 - 3.00 SOLID 23/10/2018 00:00:00 25/10/2018 08:55:52 181024-39 18590813 TM048	06/11/2018	Andrzej Ferfecki	loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-M6 0.70 - 0.70 SOLID 23/10/2018 00:00:00 25/10/2018 08:34:01 181024-39 18590716 TM048	06/11/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-D1 0.30 - 0.30 SOLID 23/10/2018 00:00:00 25/10/2018 08:53:21 181024-39 18590947 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-M5 3.00 - 3.00 SOLID 23/10/2018 00:00:00 25/10/2018 08:56:24 181024-39 18590813 TM304	None (#)	N/A	<0.001 (#)	0.0409 (#)	0.0411 (#)

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590708
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-F1
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0119	<0.0005	0.119	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00195	<0.0003	0.0195	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000488	<0.0004	0.00488	<0.004	-	-	-
Selenium	0.002	<0.001	0.02	<0.01	-	-	-
Vanadium	0.0721	<0.001	0.721	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	9.51
Conductivity (µS/cm)	114.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

13/11/2018 11:29:51

11:29:20 13/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590708
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-F1
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	9.51
Conductivity (µS/cm)	114.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.120	**Natural Moisture Content (%)**	33.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	75
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590716
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-M6
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	3.08	<0.2	30.8	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0018	<0.0005	0.018	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00579	<0.0003	0.0579	<0.003	-	-	-
Lead	0.000751	<0.0002	0.00751	<0.002	-	-	-
Manganese	0.0142	<0.003	0.142	<0.03	-	-	-
Nickel	0.00138	<0.0004	0.0138	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00147	<0.001	0.0147	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.474	<0.019	4.74	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.58
Conductivity (µS/cm)	166.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.870

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.120	**Natural Moisture Content (%)**	33.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	75
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590716
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-M6
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.58
Conductivity (µS/cm)	166.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.870

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590725
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-M6
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00195	<0.0005	0.0195	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00303	<0.0003	0.0303	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000749	<0.0004	0.00749	<0.004	-	-	-
Selenium	0.0024	<0.001	0.024	<0.01	-	-	-
Vanadium	0.112	<0.001	1.12	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	284.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590725
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-M6
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	284.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590733
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-F1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00308	<0.0005	0.0308	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00102	<0.0003	0.0102	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00387	<0.001	0.0387	<0.01	-	-	-
Zinc	0.0027	<0.001	0.027	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000097	<0.00005	0.00097	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000086	<0.00005	0.00086	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	6.83
Conductivity (µS/cm)	106.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590733
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-F1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	6.83
Conductivity (µS/cm)	106.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590750
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-L6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00342	<0.0005	0.0342	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.001	<0.001	0.01	<0.01	-	-	-
Copper	0.00765	<0.0003	0.0765	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.002	<0.0004	0.02	<0.004	-	-	-
Selenium	0.00342	<0.001	0.0342	<0.01	-	-	-
Vanadium	0.137	<0.001	1.37	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.233	<0.019	2.33	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000313	<0.0001	0.00313	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	0.000346	<0.00005	0.00346	<0.0005	-	-	-
Fluoranthene by GCMS	0.00108	<0.00005	0.0108	<0.0005	-	-	-
Anthracene by GCMS	0.000175	<0.00005	0.00175	<0.0005	-	-	-
Phenanthrene by GCMS	0.000764	<0.00005	0.00764	<0.0005	-	-	-
Fluorene by GCMS	0.00028	<0.00005	0.0028	<0.0005	-	-	-
Chrysene by GCMS	0.000167	<0.00005	0.00167	<0.0005	-	-	-
Pyrene by GCMS	0.000977	<0.00005	0.00977	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000153	<0.00005	0.00153	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000251	<0.00005	0.00251	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000155	<0.00005	0.00155	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000176	<0.00002	0.00176	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00484	<0.00082	0.0484	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	10.33
Conductivity (µS/cm)	270.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590750
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-L6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	10.33
Conductivity (µS/cm)	270.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590755
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-L6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.668	<0.2	6.68	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	0.072	<0.05	0.72	<0.5	-	-	-
Arsenic	0.00763	<0.0005	0.0763	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00137	<0.001	0.0137	<0.01	-	-	-
Copper	0.0162	<0.0003	0.162	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00289	<0.0004	0.0289	<0.004	-	-	-
Selenium	0.00674	<0.001	0.0674	<0.01	-	-	-
Vanadium	0.283	<0.001	2.83	<0.01	-	-	-
Zinc	0.00234	<0.001	0.0234	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.614	<0.019	6.14	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000333	<0.0001	0.00333	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.00107	<0.00005	0.0107	<0.0005	-	-	-
Anthracene by GCMS	0.000171	<0.00005	0.00171	<0.0005	-	-	-
Phenanthrene by GCMS	0.000787	<0.00005	0.00787	<0.0005	-	-	-
Fluorene by GCMS	0.000158	<0.00005	0.00158	<0.0005	-	-	-
Chrysene by GCMS	0.000277	<0.00005	0.00277	<0.0005	-	-	-
Pyrene by GCMS	0.000775	<0.00005	0.00775	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000278	<0.00005	0.00278	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000352	<0.00005	0.00352	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000162	<0.00005	0.00162	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000202	<0.00002	0.00202	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000107	<0.00005	0.00107	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000169	<0.00005	0.00169	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00484	<0.00082	0.0484	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.77
Conductivity (µS/cm)	247.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590755
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-L6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.77
Conductivity (µS/cm)	247.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590766
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-K6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000128	<0.00001	0.000128	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00945	<0.0005	0.0945	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00155	<0.001	0.0155	<0.01	-	-	-
Copper	0.0035	<0.0003	0.035	<0.003	-	-	-
Lead	0.000898	<0.0002	0.00898	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00211	<0.001	0.0211	<0.01	-	-	-
Vanadium	0.0834	<0.001	0.834	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.293	<0.019	2.93	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	9.52
Conductivity (µS/cm)	110.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590766
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-K6
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.5	<0.5	<5	<5	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	9.52
Conductivity (µS/cm)	110.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590774
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-K6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.248	<0.2	2.48	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00986	<0.001	0.0986	<0.01	-	-	-
Copper	0.00443	<0.0003	0.0443	<0.003	-	-	-
Lead	0.0017	<0.0002	0.017	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000526	<0.0004	0.00526	<0.004	-	-	-
Selenium	0.00227	<0.001	0.0227	<0.01	-	-	-
Vanadium	0.0033	<0.001	0.033	<0.01	-	-	-
Zinc	0.0188	<0.001	0.188	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	11.97
Conductivity (µS/cm)	1,690.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590774
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-K6
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	11.97
Conductivity (µS/cm)	1,690.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590797
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-M5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000958	<0.0005	0.00958	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00106	<0.0003	0.0106	<0.003	-	-	-
Lead	0.00078	<0.0002	0.0078	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00068	<0.0004	0.0068	<0.004	-	-	-
Selenium	0.00226	<0.001	0.0226	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00246	<0.001	0.0246	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.355	<0.019	3.55	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.87
Conductivity (µS/cm)	150.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590797
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-M5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.87
Conductivity (µS/cm)	150.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590804
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-M5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000677	<0.0005	0.00677	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00994	<0.001	0.0994	<0.01	-	-	-
Copper	0.018	<0.0003	0.18	<0.003	-	-	-
Lead	0.00189	<0.0002	0.0189	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000791	<0.0004	0.00791	<0.004	-	-	-
Selenium	0.0019	<0.001	0.019	<0.01	-	-	-
Vanadium	0.00526	<0.001	0.0526	<0.01	-	-	-
Zinc	0.0029	<0.001	0.029	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	11.91
Conductivity (µS/cm)	1,490.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590804
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-M5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	11.91
Conductivity (µS/cm)	1,490.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.61
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.8
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590813
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-M5
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00824	<0.001	0.0824	<0.01	-	-	-
Copper	0.00475	<0.0003	0.0475	<0.003	-	-	-
Lead	0.0233	<0.0002	0.233	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000411	<0.0004	0.00411	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00976	<0.001	0.0976	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	12.54
Conductivity (µS/cm)	7,250.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.61
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.8
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590813
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-M5
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.5	<0.5	<5	<5	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	12.54
Conductivity (µS/cm)	7,250.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590828
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-M5
Depth (m)	4.00 - 4.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	2.19	<0.2	21.9	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00693	<0.0005	0.0693	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00316	<0.001	0.0316	<0.01	-	-	-
Copper	0.0435	<0.0003	0.435	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00288	<0.0004	0.0288	<0.004	-	-	-
Selenium	0.00991	<0.001	0.0991	<0.01	-	-	-
Vanadium	0.0663	<0.001	0.663	<0.01	-	-	-
Zinc	0.00129	<0.001	0.0129	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	11.49
Conductivity (µS/cm)	605.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590828
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-M5
Depth (m)	4.00 - 4.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	11.49
Conductivity (µS/cm)	605.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590838
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-L5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00527	<0.0005	0.0527	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00305	<0.0003	0.0305	<0.003	-	-	-
Lead	0.000232	<0.0002	0.00232	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000484	<0.0004	0.00484	<0.004	-	-	-
Selenium	0.00269	<0.001	0.0269	<0.01	-	-	-
Vanadium	0.0212	<0.001	0.212	<0.01	-	-	-
Zinc	0.00339	<0.001	0.0339	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.238	<0.019	2.38	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.88
Conductivity (µS/cm)	133.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590838
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-L5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.88
Conductivity (µS/cm)	133.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590848
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-L5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00208	<0.0005	0.0208	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00704	<0.001	0.0704	<0.01	-	-	-
Copper	0.0254	<0.0003	0.254	<0.003	-	-	-
Lead	0.000285	<0.0002	0.00285	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00102	<0.0004	0.0102	<0.004	-	-	-
Selenium	0.00467	<0.001	0.0467	<0.01	-	-	-
Vanadium	0.0324	<0.001	0.324	<0.01	-	-	-
Zinc	0.0017	<0.001	0.017	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.24	<0.019	2.4	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	11.33
Conductivity (µS/cm)	797.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.9
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590848
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-L5
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	11.33
Conductivity (µS/cm)	797.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.8
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590857
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-L5
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.326	<0.2	3.26	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00055	<0.0005	0.0055	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00736	<0.001	0.0736	<0.01	-	-	-
Copper	0.00733	<0.0003	0.0733	<0.003	-	-	-
Lead	0.0576	<0.0002	0.576	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000826	<0.0004	0.00826	<0.004	-	-	-
Selenium	0.00119	<0.001	0.0119	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0369	<0.001	0.369	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	12.03
Conductivity (µS/cm)	6,750.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.8
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590857
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-L5
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	12.03
Conductivity (µS/cm)	6,750.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.37
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.9
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590869
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-C1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000254	<0.00001	0.000254	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00223	<0.0005	0.0223	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0049	<0.0003	0.049	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00076	<0.0004	0.0076	<0.004	-	-	-
Selenium	0.00341	<0.001	0.0341	<0.01	-	-	-
Vanadium	0.0488	<0.001	0.488	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000197	<0.0001	0.00197	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000267	<0.00005	0.00267	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000268	<0.00005	0.00268	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000187	<0.00005	0.00187	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000111	<0.00005	0.00111	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000553	<0.00005	0.000553	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000081	<0.00002	0.00081	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00116	<0.00082	0.0116	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.12
Conductivity (µS/cm)	265.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.37
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.9
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590869
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-C1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.12
Conductivity (µS/cm)	265.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590878
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-K7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00567	<0.0005	0.0567	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00142	<0.001	0.0142	<0.01	-	-	-
Copper	0.0086	<0.0003	0.086	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00447	<0.003	0.0447	<0.03	-	-	-
Nickel	0.00189	<0.0004	0.0189	<0.004	-	-	-
Selenium	0.00219	<0.001	0.0219	<0.01	-	-	-
Vanadium	0.0839	<0.001	0.839	<0.01	-	-	-
Zinc	0.00273	<0.001	0.0273	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0601	<0.019	0.601	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000188	<0.0001	0.00188	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.00124	<0.00005	0.0124	<0.0005	-	-	-
Anthracene by GCMS	0.000294	<0.00005	0.00294	<0.0005	-	-	-
Phenanthrene by GCMS	0.000343	<0.00005	0.00343	<0.0005	-	-	-
Fluorene by GCMS	0.000124	<0.00005	0.00124	<0.0005	-	-	-
Chrysene by GCMS	0.000587	<0.00005	0.00587	<0.0005	-	-	-
Pyrene by GCMS	0.000842	<0.00005	0.00842	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000491	<0.00005	0.00491	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00121	<0.00005	0.0121	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000537	<0.00005	0.00537	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000741	<0.00002	0.00741	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000191	<0.00005	0.00191	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000552	<0.00005	0.00552	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000582	<0.00005	0.00582	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00792	<0.00082	0.0792	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	9.26
Conductivity (µS/cm)	193.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590878
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-K7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	9.26
Conductivity (µS/cm)	193.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590886
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-K7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00496	<0.0005	0.0496	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00141	<0.001	0.0141	<0.01	-	-	-
Copper	0.00308	<0.0003	0.0308	<0.003	-	-	-
Lead	0.000226	<0.0002	0.00226	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000542	<0.0004	0.00542	<0.004	-	-	-
Selenium	0.00268	<0.001	0.0268	<0.01	-	-	-
Vanadium	0.0516	<0.001	0.516	<0.01	-	-	-
Zinc	0.00134	<0.001	0.0134	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.382	<0.019	3.82	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	0.000147	<0.00005	0.00147	<0.0005	-	-	-
Fluoranthene by GCMS	0.000967	<0.00005	0.00967	<0.0005	-	-	-
Anthracene by GCMS	0.00018	<0.00005	0.0018	<0.0005	-	-	-
Phenanthrene by GCMS	0.000301	<0.00005	0.00301	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000488	<0.00005	0.00488	<0.0005	-	-	-
Pyrene by GCMS	0.000907	<0.00005	0.00907	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000454	<0.00005	0.00454	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000915	<0.00005	0.00915	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000538	<0.00005	0.00538	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000516	<0.00002	0.00516	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00017	<0.00005	0.0017	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000486	<0.00005	0.00486	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000411	<0.00005	0.00411	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00648	<0.00082	0.0648	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	9.44
Conductivity (µS/cm)	140.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590886
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-K7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	9.44
Conductivity (µS/cm)	140.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590898
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-K8
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0104	<0.001	0.104	<0.01	-	-	-
Copper	0.00137	<0.0003	0.0137	<0.003	-	-	-
Lead	0.0003	<0.0002	0.003	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0016	<0.001	0.016	<0.01	-	-	-
Vanadium	0.0407	<0.001	0.407	<0.01	-	-	-
Zinc	0.00204	<0.001	0.0204	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	11.11
Conductivity (µS/cm)	535.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.5
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590898
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-K8
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	11.11
Conductivity (µS/cm)	535.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590904
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-E1
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0048	<0.0005	0.048	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00134	<0.001	0.0134	<0.01	-	-	-
Copper	0.00499	<0.0003	0.0499	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000657	<0.0004	0.00657	<0.004	-	-	-
Selenium	0.00177	<0.001	0.0177	<0.01	-	-	-
Vanadium	0.139	<0.001	1.39	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.47
Conductivity (µS/cm)	226.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590904
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-E1
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.015	<0.01	0.15	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.47
Conductivity (µS/cm)	226.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	5.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.4
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590910
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-K8
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000226	<0.00001	0.000226	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00236	<0.001	0.0236	<0.01	-	-	-
Copper	0.00254	<0.0003	0.0254	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00125	<0.001	0.0125	<0.01	-	-	-
Vanadium	0.0244	<0.001	0.244	<0.01	-	-	-
Zinc	0.00147	<0.001	0.0147	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000153	<0.00005	0.00153	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000114	<0.00005	0.00114	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	11.41
Conductivity (µS/cm)	999.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	5.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.4
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590910
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-K8
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	11.41
Conductivity (µS/cm)	999.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.6
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590924
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-E1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00995	<0.0005	0.0995	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0039	<0.0003	0.039	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000658	<0.0004	0.00658	<0.004	-	-	-
Selenium	0.00228	<0.001	0.0228	<0.01	-	-	-
Vanadium	0.086	<0.001	0.86	<0.01	-	-	-
Zinc	0.00171	<0.001	0.0171	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000197	<0.0001	0.00197	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000549	<0.00005	0.00549	<0.0005	-	-	-
Anthracene by GCMS	0.0000947	<0.00005	0.000947	<0.0005	-	-	-
Phenanthrene by GCMS	0.000367	<0.00005	0.00367	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000205	<0.00005	0.00205	<0.0005	-	-	-
Pyrene by GCMS	0.000454	<0.00005	0.00454	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000172	<0.00005	0.00172	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000253	<0.00005	0.00253	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000116	<0.00005	0.00116	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000138	<0.00002	0.00138	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00255	<0.00082	0.0255	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.28
Conductivity (µS/cm)	184.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.84
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.6
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590924
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-E1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.28
Conductivity (µS/cm)	184.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590947
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-D1
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0188	<0.0005	0.188	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00303	<0.0003	0.0303	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00328	<0.001	0.0328	<0.01	-	-	-
Vanadium	0.0449	<0.001	0.449	<0.01	-	-	-
Zinc	0.00106	<0.001	0.0106	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000363	<0.00001	0.000363	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Fluoranthene by GCMS	0.000235	<0.000005	0.00235	<0.00005	-	-	-
Anthracene by GCMS	0.0000427	<0.000005	0.000427	<0.00005	-	-	-
Phenanthrene by GCMS	0.000185	<0.000005	0.00185	<0.00005	-	-	-
Fluorene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Chrysene by GCMS	0.0000774	<0.000005	0.000774	<0.00005	-	-	-
Pyrene by GCMS	0.000162	<0.000005	0.00162	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000623	<0.000005	0.000623	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000922	<0.000005	0.000922	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000465	<0.000005	0.000465	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000468	<0.000002	0.000468	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000208	<0.000005	0.000208	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000343	<0.000005	0.000343	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00107	<0.000082	0.0107	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.84
Conductivity (µS/cm)	164.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590947
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-D1
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.01	<0.01	0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	25-Oct-2018
pH (pH Units)	8.84
Conductivity (µS/cm)	164.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590963
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-C1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000251	<0.00001	0.000251	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00365	<0.0005	0.0365	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0045	<0.0003	0.045	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000982	<0.0004	0.00982	<0.004	-	-	-
Selenium	0.00244	<0.001	0.0244	<0.01	-	-	-
Vanadium	0.0756	<0.001	0.756	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000406	<0.00005	0.00406	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000333	<0.00005	0.00333	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000294	<0.00005	0.00294	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000165	<0.00005	0.00165	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000849	<0.00005	0.000849	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00128	<0.00082	0.0128	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.45
Conductivity (µS/cm)	214.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590963
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-C1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.45
Conductivity (µS/cm)	214.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590974
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-D1
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0126	<0.001	0.126	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.17
Conductivity (µS/cm)	169.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590974
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-D1
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.17
Conductivity (µS/cm)	169.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590981
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-D1
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000808	<0.0003	0.00808	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.03
Conductivity (µS/cm)	113.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18590981
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-D1
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.5	<0.5	<5	<5	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.03
Conductivity (µS/cm)	113.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18591010
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-B1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000231	<0.00001	0.000231	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00248	<0.0005	0.0248	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00229	<0.001	0.0229	<0.01	-	-	-
Copper	0.00644	<0.0003	0.0644	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000773	<0.0004	0.00773	<0.004	-	-	-
Selenium	0.00135	<0.001	0.0135	<0.01	-	-	-
Vanadium	0.197	<0.001	1.97	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	11.30
Conductivity (µS/cm)	351.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18591010
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-B1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.5	<0.5	<5	<5	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	11.30
Conductivity (µS/cm)	351.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.37
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.9
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18591016
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-B1
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000571	<0.0005	0.00571	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000659	<0.0003	0.00659	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00514	<0.001	0.0514	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.90
Conductivity (µS/cm)	97.50
Temperature (°C)	18.10
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.37
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.9
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18591016
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-B1
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.90
Conductivity (µS/cm)	97.50
Temperature (°C)	18.10
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18591023
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-B1
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00139	<0.0005	0.0139	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00243	<0.0003	0.0243	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00106	<0.001	0.0106	<0.01	-	-	-
Vanadium	0.00192	<0.001	0.0192	<0.01	-	-	-
Zinc	0.00277	<0.001	0.0277	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.45
Conductivity (µS/cm)	156.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181024-39
Lab Sample Number(s)	18591023
Sampled Date	23-Oct-2018
Customer Sample Ref.	3C-B1
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.45
Conductivity (µS/cm)	156.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Test Completion Dates

Lab Sample No(s)	18591010	18591016	18591023	18591033	18590869	18590963	18590998	18590947	18590974	18590981
Customer Sample Ref.	3C-B1	3C-B1	3C-B1	3C-B1-V	3C-C1	3C-C1	3C-C1-V	3C-D1	3C-D1	3C-D1
AGS Ref.										
Depth	0.50 - 0.50	0.80 - 0.80	1.20 - 1.20	1.65 - 1.65	0.50 - 0.50	1.00 - 1.00	1.45 - 1.45	0.30 - 0.30	0.70 - 0.70	1.20 - 1.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	31-Oct-2018		31-Oct-2018		31-Oct-2018			31-Oct-2018		31-Oct-2018
Ammoniacal Nitrogen	01-Nov-2018	01-Nov-2018	01-Nov-2018		06-Nov-2018	05-Nov-2018		02-Nov-2018	01-Nov-2018	01-Nov-2018
Ammonium Soil by Titration	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	06-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018
Anions by Kone (soil)	01-Nov-2018		01-Nov-2018		02-Nov-2018			01-Nov-2018		01-Nov-2018
Asbestos ID in Solid Samples	06-Nov-2018		06-Nov-2018		06-Nov-2018			06-Nov-2018		06-Nov-2018
Asbestos Quantification - Full								07-Nov-2018		
CEN 10:1 Leachate (1 Stage)	27-Oct-2018	27-Oct-2018	27-Oct-2018		31-Oct-2018	31-Oct-2018		25-Oct-2018	27-Oct-2018	27-Oct-2018
CEN Readings	03-Nov-2018	03-Nov-2018	03-Nov-2018		03-Nov-2018	03-Nov-2018		02-Nov-2018	03-Nov-2018	02-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018
Dissolved Metals by ICP-MS	06-Nov-2018	06-Nov-2018	07-Nov-2018		07-Nov-2018	07-Nov-2018		07-Nov-2018	06-Nov-2018	06-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	02-Nov-2018	02-Nov-2018	02-Nov-2018		06-Nov-2018	06-Nov-2018		01-Nov-2018	02-Nov-2018	02-Nov-2018
EPH CWG (Aliphatic) GC (S)	01-Nov-2018	01-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	31-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	02-Nov-2018	02-Nov-2018	02-Nov-2018		06-Nov-2018	06-Nov-2018		01-Nov-2018	02-Nov-2018	02-Nov-2018
EPH CWG (Aromatic) GC (S)	01-Nov-2018	01-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	31-Oct-2018
GRO by GC-FID (S)	05-Nov-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018	06-Nov-2018	04-Nov-2018	04-Nov-2018
GRO by GC-FID (W)	03-Nov-2018	01-Nov-2018	02-Nov-2018		04-Nov-2018	03-Nov-2018		01-Nov-2018	01-Nov-2018	03-Nov-2018
Mercury Dissolved	07-Nov-2018	07-Nov-2018	06-Nov-2018		07-Nov-2018	07-Nov-2018		06-Nov-2018	07-Nov-2018	07-Nov-2018
Metals in solid samples by OES	31-Oct-2018	31-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	30-Oct-2018
PAH by GCMS	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018
PAH Spec MS - Aqueous (W)	02-Nov-2018	02-Nov-2018	02-Nov-2018		06-Nov-2018	06-Nov-2018		31-Oct-2018	02-Nov-2018	02-Nov-2018
pH	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018
pH Value	05-Nov-2018	05-Nov-2018	06-Nov-2018		05-Nov-2018	05-Nov-2018		06-Nov-2018	05-Nov-2018	05-Nov-2018
Phenols by HPLC (S)	06-Nov-2018	06-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	06-Nov-2018
Sample description	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	25-Oct-2018	24-Oct-2018	24-Oct-2018
Total Organic Carbon	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018
Total Sulphate	02-Nov-2018		31-Oct-2018		31-Oct-2018			31-Oct-2018		31-Oct-2018
Total Sulphur	26-Oct-2018		01-Nov-2018		26-Oct-2018			26-Oct-2018		26-Oct-2018
TPH CWG (W)	03-Nov-2018	02-Nov-2018	02-Nov-2018		06-Nov-2018	06-Nov-2018		01-Nov-2018	02-Nov-2018	03-Nov-2018
TPH CWG GC (S)	05-Nov-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018	06-Nov-2018	04-Nov-2018	04-Nov-2018
VOC MS (S)	04-Nov-2018	03-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018

Lab Sample No(s)	18590791	18590904	18590924	18590937	18590708	18590733	18590823	18590766	18590774	18590878
Customer Sample Ref.	3C-D1-V	3C-E1	3C-E1	3C-E1-V	3C-F1	3C-F1	3C-F1-V	3C-K6	3C-K6	3C-K7
AGS Ref.										
Depth	1.65 - 1.65	0.40 - 0.40	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	1.00 - 1.00	1.75 - 1.75	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)			07-Nov-2018		31-Oct-2018			31-Oct-2018		31-Oct-2018
Ammoniacal Nitrogen		02-Nov-2018	05-Nov-2018		01-Nov-2018	06-Nov-2018		01-Nov-2018	06-Nov-2018	06-Nov-2018
Ammonium Soil by Titration	07-Nov-2018	07-Nov-2018	06-Nov-2018	07-Nov-2018	06-Nov-2018	07-Nov-2018	06-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018
Anions by Kone (soil)			02-Nov-2018		01-Nov-2018			01-Nov-2018		01-Nov-2018
Asbestos ID in Solid Samples			06-Nov-2018		06-Nov-2018			06-Nov-2018		06-Nov-2018
CEN 10:1 Leachate (1 Stage)		27-Oct-2018	31-Oct-2018		27-Oct-2018	31-Oct-2018		27-Oct-2018	31-Oct-2018	31-Oct-2018
CEN Readings		02-Nov-2018	03-Nov-2018		03-Nov-2018	03-Nov-2018		03-Nov-2018	03-Nov-2018	03-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	12-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018
Dissolved Metals by ICP-MS		06-Nov-2018	07-Nov-2018		06-Nov-2018	07-Nov-2018		06-Nov-2018	07-Nov-2018	07-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)		02-Nov-2018	06-Nov-2018		02-Nov-2018	06-Nov-2018		02-Nov-2018	06-Nov-2018	06-Nov-2018
EPH CWG (Aliphatic) GC (S)	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	31-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)		02-Nov-2018	06-Nov-2018		02-Nov-2018	06-Nov-2018		02-Nov-2018	06-Nov-2018	06-Nov-2018
EPH CWG (Aromatic) GC (S)	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	31-Oct-2018
GRO by GC-FID (S)	04-Nov-2018	05-Nov-2018	04-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	04-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
GRO by GC-FID (W)		01-Nov-2018	04-Nov-2018		03-Nov-2018	04-Nov-2018		06-Nov-2018	03-Nov-2018	03-Nov-2018
Mercury Dissolved		07-Nov-2018	07-Nov-2018		07-Nov-2018	07-Nov-2018		07-Nov-2018	07-Nov-2018	07-Nov-2018
Metals in solid samples by OES	29-Oct-2018	31-Oct-2018	31-Oct-2018	29-Oct-2018	31-Oct-2018	30-Oct-2018	29-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
PAH by GCMS	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	07-Nov-2018	05-Nov-2018	07-Nov-2018	02-Nov-2018	02-Nov-2018
PAH Spec MS - Aqueous (W)		02-Nov-2018	06-Nov-2018		02-Nov-2018	06-Nov-2018		02-Nov-2018	06-Nov-2018	06-Nov-2018
pH	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
pH Value		05-Nov-2018	06-Nov-2018		05-Nov-2018	05-Nov-2018		05-Nov-2018	05-Nov-2018	05-Nov-2018
Phenols by HPLC (S)	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
Sample description	24-Oct-2018	24-Oct-2018	25-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	25-Oct-2018	24-Oct-2018
Total Organic Carbon	07-Nov-2018	07-Nov-2018	07-Nov-2018	26-Oct-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018
Total Sulphate			02-Nov-2018		31-Oct-2018			31-Oct-2018		31-Oct-2018
Total Sulphur			01-Nov-2018		26-Oct-2018			01-Nov-2018		01-Nov-2018
TPH CWG (W)		02-Nov-2018	06-Nov-2018		03-Nov-2018	06-Nov-2018		06-Nov-2018	06-Nov-2018	06-Nov-2018
TPH CWG GC (S)	04-Nov-2018	05-Nov-2018	04-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	04-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
VOC MS (S)	04-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	06-Nov-2018	02-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Lab Sample No(s)	18590886	18590898	18590910	18590784	18590893	18590919	18590838	18590848	18590857	18590750
Customer Sample Ref.	3C-K7	3C-K8	3C-K8	3C-K6-V	3C-K7-V	3C-K8-V	3C-L5	3C-L5	3C-L5	3C-L6
AGS Ref.										
Depth	1.00 - 1.00	0.70 - 0.70	1.80 - 1.80	2.50 - 2.50	2.20 - 2.20	2.80 - 2.80	0.50 - 0.50	2.00 - 2.00	3.00 - 3.00	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		31-Oct-2018					31-Oct-2018		07-Nov-2018	
Ammoniacal Nitrogen	06-Nov-2018	05-Nov-2018	05-Nov-2018				01-Nov-2018	01-Nov-2018	05-Nov-2018	05-Nov-2018
Ammonium Soil by Titration	07-Nov-2018	07-Nov-2018	07-Nov-2018	06-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	06-Nov-2018	07-Nov-2018
Anions by Kone (soil)		02-Nov-2018					01-Nov-2018		02-Nov-2018	
Asbestos ID in Solid Samples		06-Nov-2018					06-Nov-2018		06-Nov-2018	
CEN 10:1 Leachate (1 Stage)	31-Oct-2018	31-Oct-2018	31-Oct-2018				27-Oct-2018	27-Oct-2018	31-Oct-2018	31-Oct-2018
CEN Readings	03-Nov-2018	03-Nov-2018	03-Nov-2018				03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	13-Nov-2018	12-Nov-2018	13-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018
Dissolved Metals by ICP-MS	07-Nov-2018	07-Nov-2018	07-Nov-2018				06-Nov-2018	06-Nov-2018	07-Nov-2018	07-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	06-Nov-2018	06-Nov-2018	06-Nov-2018				02-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018
EPH CWG (Aliphatic) GC (S)	01-Nov-2018	31-Oct-2018	01-Nov-2018	29-Oct-2018	31-Oct-2018	31-Oct-2018	01-Nov-2018	31-Oct-2018	01-Nov-2018	31-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	06-Nov-2018	06-Nov-2018	06-Nov-2018				02-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018
EPH CWG (Aromatic) GC (S)	01-Nov-2018	31-Oct-2018	01-Nov-2018	29-Oct-2018	31-Oct-2018	31-Oct-2018	01-Nov-2018	31-Oct-2018	01-Nov-2018	01-Nov-2018
GRO by GC-FID (S)	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018	05-Nov-2018	06-Nov-2018
GRO by GC-FID (W)	03-Nov-2018	04-Nov-2018	03-Nov-2018				01-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018
Mercury Dissolved	07-Nov-2018	07-Nov-2018	07-Nov-2018				07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018
Metals in solid samples by OES	29-Oct-2018	31-Oct-2018	29-Oct-2018	30-Oct-2018	29-Oct-2018	29-Oct-2018	30-Oct-2018	30-Oct-2018	01-Nov-2018	01-Nov-2018
PAH by GCMS	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	07-Nov-2018	05-Nov-2018	05-Nov-2018
PAH Spec MS - Aqueous (W)	06-Nov-2018	06-Nov-2018	06-Nov-2018				02-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018
pH	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
pH Value	05-Nov-2018	06-Nov-2018	05-Nov-2018				05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
Phenols by HPLC (S)	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
Sample description	24-Oct-2018	24-Oct-2018	24-Oct-2018	25-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018	25-Oct-2018	25-Oct-2018	24-Oct-2018
Total Organic Carbon	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	06-Nov-2018	07-Nov-2018
Total Sulphate		31-Oct-2018					02-Nov-2018		31-Oct-2018	
Total Sulphur		01-Nov-2018					26-Oct-2018		01-Nov-2018	
TPH CWG (W)	06-Nov-2018	06-Nov-2018	06-Nov-2018				02-Nov-2018	03-Nov-2018	06-Nov-2018	06-Nov-2018
TPH CWG GC (S)	05-Nov-2018	06-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018	05-Nov-2018	06-Nov-2018
VOC MS (S)	06-Nov-2018	06-Nov-2018	02-Nov-2018	04-Nov-2018	05-Nov-2018	03-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018

Lab Sample No(s)	18590755	18590863	18590760	18590797	18590804	18590813	18590828	18590716	18590725	18590831
Customer Sample Ref.	3C-L6	3C-L5-V	3C-L6-V	3C-M5	3C-M5	3C-M5	3C-M5	3C-M6	3C-M6	3C-M5-V
AGS Ref.										
Depth	1.00 - 1.00	5.40 - 5.40	3.00 - 3.00	0.50 - 0.50	2.00 - 2.00	3.00 - 3.00	4.00 - 4.00	0.70 - 0.70	1.50 - 1.50	4.70 - 4.70
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	31-Oct-2018			07-Nov-2018		31-Oct-2018		30-Oct-2018		
Ammoniacal Nitrogen	05-Nov-2018			01-Nov-2018	06-Nov-2018	01-Nov-2018	01-Nov-2018	05-Nov-2018	05-Nov-2018	
Ammonium Soil by Titration	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	06-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018
Anions by Kone (soil)	07-Nov-2018			01-Nov-2018		02-Nov-2018		01-Nov-2018		
Asbestos ID in Solid Samples	06-Nov-2018			06-Nov-2018		06-Nov-2018		06-Nov-2018		
Asbestos Quantification - Full						07-Nov-2018				
CEN 10:1 Leachate (1 Stage)	31-Oct-2018			27-Oct-2018	31-Oct-2018	27-Oct-2018	27-Oct-2018	31-Oct-2018	31-Oct-2018	
CEN Readings	03-Nov-2018			03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	13-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018
Dissolved Metals by ICP-MS	07-Nov-2018			06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	07-Nov-2018	07-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	06-Nov-2018			02-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	
EPH CWG (Aliphatic) GC (S)	31-Oct-2018	01-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	30-Oct-2018	01-Nov-2018	01-Nov-2018	31-Oct-2018	31-Oct-2018
EPH CWG (Aromatic) Aqueous GC (W)	06-Nov-2018			02-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	
EPH CWG (Aromatic) GC (S)	31-Oct-2018	01-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	30-Oct-2018	01-Nov-2018	01-Nov-2018	31-Oct-2018	31-Oct-2018
GRO by GC-FID (S)	06-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018
GRO by GC-FID (W)	04-Nov-2018			01-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	04-Nov-2018	04-Nov-2018	
Mercury Dissolved	07-Nov-2018			07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	
Metals in solid samples by OES	31-Oct-2018	30-Oct-2018	29-Oct-2018	31-Oct-2018	30-Oct-2018	31-Oct-2018	31-Oct-2018	30-Oct-2018	30-Oct-2018	31-Oct-2018
PAH by GCMS	05-Nov-2018	07-Nov-2018	05-Nov-2018	07-Nov-2018	07-Nov-2018	05-Nov-2018	07-Nov-2018	02-Nov-2018	02-Nov-2018	05-Nov-2018
PAH Spec MS - Aqueous (W)	06-Nov-2018			02-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	
pH	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	07-Nov-2018	06-Nov-2018
pH Value	06-Nov-2018			05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	06-Nov-2018	
Phenols by HPLC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
Sample description	24-Oct-2018	25-Oct-2018	24-Oct-2018	25-Oct-2018	24-Oct-2018	24-Oct-2018	25-Oct-2018	24-Oct-2018	24-Oct-2018	24-Oct-2018
Total Organic Carbon	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018
Total Sulphate	02-Nov-2018			31-Oct-2018		31-Oct-2018		31-Oct-2018		
Total Sulphur	01-Nov-2018			01-Nov-2018		01-Nov-2018		01-Nov-2018		
TPH CWG (W)	06-Nov-2018			02-Nov-2018	06-Nov-2018	03-Nov-2018	03-Nov-2018	06-Nov-2018	06-Nov-2018	
TPH CWG GC (S)	06-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	06-Nov-2018	05-Nov-2018
VOC MS (S)	04-Nov-2018	06-Nov-2018	02-Nov-2018	04-Nov-2018	06-Nov-2018	04-Nov-2018	06-Nov-2018	04-Nov-2018	06-Nov-2018	04-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181024-39	**Client Reference:**		**Report Number:**	480803
Location:	Llanwern	**Order Number:**	LLA495	**Superseded Report:**	480797

Lab Sample No(s)	18590742
Customer Sample Ref.	3C-M6-V
AGS Ref.	
Depth	3.20 - 3.20
Type	Soil/Solid (S)

Ammonium Soil by Titration	07-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	13-Nov-2018
EPH CWG (Aliphatic) GC (S)	31-Oct-2018
EPH CWG (Aromatic) GC (S)	31-Oct-2018
GRO by GC-FID (S)	06-Nov-2018
Metals in solid samples by OES	30-Oct-2018
PAH by GCMS	05-Nov-2018
pH	07-Nov-2018
Phenols by HPLC (S)	05-Nov-2018
Sample description	24-Oct-2018
Total Organic Carbon	07-Nov-2018
TPH CWG GC (S)	06-Nov-2018
VOC MS (S)	04-Nov-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	14 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181025-118
Your Reference:	
Location:	Llanwern
Report No:	480980

We received 16 samples on Thursday October 25, 2018 and 16 of these samples were scheduled for analysis which was completed on Wednesday November 14, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18604550	3C-K4		0.50 - 0.50	24/10/2018
18604557	3C-K4		1.00 - 1.00	24/10/2018
18604524	3C-K5		0.50 - 0.50	24/10/2018
18604583	3C-K5		1.50 - 1.50	24/10/2018
18604562	3C-K4-V		4.00 - 4.00	24/10/2018
18604592	3C-K5-V		3.50 - 3.50	24/10/2018
18604620	3C-L4		1.00 - 1.00	24/10/2018
18604626	3C-L4		2.50 - 2.50	24/10/2018
18604538	3C-L4		3.00 - 3.00	24/10/2018
18604544	3C-L4-V		5.20 - 5.20	24/10/2018
18604569	3C-M3		0.50 - 0.50	24/10/2018
18604601	3C-M4		0.70 - 0.70	24/10/2018
18604606	3C-M4		1.80 - 1.80	24/10/2018
18604610	3C-M4		2.50 - 2.50	24/10/2018
18604575	3C-M3-V		1.70 - 1.70	24/10/2018
18604615	3C-M4-V		4.20 - 4.20	24/10/2018

Maximum Sample/Coolbox Temperature (°C) : **9.0**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																	
			18604550			18604557			18604524			18604583			18604562		18604592			18604620	
			Customer Sample Reference																	
			3C-K4			3C-K4			3C-K5			3C-K5			3C-K4-V		3C-K5-V			3C-L4	
			AGS Reference																	
			Depth (m)																	
			0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.50 - 1.50			4.00 - 4.00		3.50 - 3.50			1.00 - 1.00	
			Container																	
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type																	
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 9		X			X			X			X							X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 11	X			X			X			X							X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 16		X			X			X			X		X		X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 9		X			X			X			X							X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 9	X			X			X			X							X		
CEN Readings	All	NDPs: 0 Tests: 11	X			X			X			X							X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 27	X	X		X	X		X	X		X	X		X		X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 11	X			X			X			X							X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 11	X			X			X			X							X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 16		X			X			X			X		X		X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 11	X			X			X			X							X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 16		X			X			X			X		X		X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 16			X			X			X			X		X		X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 11	X			X			X			X							X		
Mercury Dissolved	All	NDPs: 0 Tests: 11	X			X			X			X							X		

18604575	3C-M3-V		1.70 - 1.70	250g Amber Jar (ALE210)	S				x					x				x			x				
18604610	3C-M4		2.50 - 2.50	60g VOC (ALE215)	S																	x			
				250g Amber Jar (ALE210)	S		x			x		x														
				1kg TUB	S			x					x			x										
18604606	3C-M4		1.80 - 1.80	60g VOC (ALE215)	S																	x			
				250g Amber Jar (ALE210)	S																					
				1kg TUB	S			x					x													
18604601	3C-M4		0.70 - 0.70	60g VOC (ALE215)	S																	x			
				250g Amber Jar (ALE210)	S		x			x		x														
				1kg TUB	S			x					x													
18604569	3C-M3		0.50 - 0.50	60g VOC (ALE215)	S																	x			
				250g Amber Jar (ALE210)	S		x			x		x														
				1kg TUB	S			x					x													
18604544	3C-L4-V		5.20 - 5.20	60g VOC (ALE215)	S																	x			
				250g Amber Jar (ALE210)	S				x					x				x			x				
18604538	3C-L4		3.00 - 3.00	60g VOC (ALE215)	S																	x			
				250g Amber Jar (ALE210)	S				x					x				x			x				
				1kg TUB	S			x					x													
18604626	3C-L4		2.50 - 2.50	60g VOC (ALE215)	S																	x			
				250g Amber Jar (ALE210)	S		x			x		x														
				1kg TUB	S			x					x													

Validated

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18604550			18604557			18604524			18604583			18604562			18604592			18604620
Customer Sample Reference			3C-K4			3C-K4			3C-K5			3C-K5			3C-K4-V			3C-K5-V			3C-L4
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.50 - 1.50			4.00 - 4.00			3.50 - 3.50			1.00 - 1.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 16		X			X			X			X		X		X			X	
PAH by GCMS	All	NDPs: 0 Tests: 16		X			X			X			X		X		X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 11	X			X			X			X							X		
pH	All	NDPs: 0 Tests: 16		X			X			X			X		X		X			X	
pH Value	All	NDPs: 0 Tests: 11	X			X			X			X							X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 16		X			X			X			X		X		X			X	
Sample description	All	NDPs: 0 Tests: 16		X			X			X			X		X		X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 16		X			X			X			X		X		X			X	
Total Sulphate	All	NDPs: 0 Tests: 9		X			X			X			X							X	
Total Sulphur	All	NDPs: 0 Tests: 9		X			X			X			X							X	
TPH CWG (W)	All	NDPs: 0 Tests: 11	X			X			X			X							X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 16		X			X			X			X		X		X			X	
VOC MS (S)	All	NDPs: 0 Tests: 16			X			X			X			X		X		X			X

18604575	3C-M3-V		1.70 - 1.70	250g Amber Jar (ALE210)	S		x		x			x			x		x		x				x	
18604610	3C-M4		2.50 - 2.50	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x		x		x		x	
				1kg TUB	S					x			x									x		
18604606	3C-M4		1.80 - 1.80	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x		x				x	
				1kg TUB	S					x			x									x		
18604601	3C-M4		0.70 - 0.70	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x		x		x		x	
				1kg TUB	S					x			x									x		
18604569	3C-M3		0.50 - 0.50	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x		x		x		x	
				1kg TUB	S					x			x									x		
18604544	3C-L4-V		5.20 - 5.20	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x		x				x	
18604538	3C-L4		3.00 - 3.00	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x		x				x	
				1kg TUB	S					x			x									x		
18604626	3C-L4		2.50 - 2.50	60g VOC (ALE215)	S																			x
				250g Amber Jar (ALE210)	S		x		x			x			x		x		x		x		x	
				1kg TUB	S					x			x									x		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18604575			18604615
Customer Sample Reference			3C-M3-V			3C-M4-V
AGS Reference						
Depth (m)			1.70 - 1.70			4.20 - 4.20
Container			60g VOC (ALE215)	250g Amber Jar (ALE210)		60g VOC (ALE215)
Sample Type			S	S		S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 16		X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 27		X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 16		X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 16		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 16	X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 16		X		
PAH by GCMS	All	NDPs: 0 Tests: 16		X		
pH	All	NDPs: 0 Tests: 16		X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 16		X		
Sample description	All	NDPs: 0 Tests: 16		X		
Total Organic Carbon	All	NDPs: 0 Tests: 16		X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 16		X		
VOC MS (S)	All	NDPs: 0 Tests: 16	X			X

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18604550	3C-K4	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18604557	3C-K4	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18604524	3C-K5	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18604583	3C-K5	1.50 - 1.50	Black	Sand	Vegetation	Stones
18604562	3C-K4-V	4.00 - 4.00	Dark Brown	Silty Clay	None	None
18604592	3C-K5-V	3.50 - 3.50	Dark Brown	Clay Loam	None	None
18604538	3C-L4	3.00 - 3.00	Dark Brown	Loamy Sand	Stones	Stones
18604620	3C-L4	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18604626	3C-L4	2.50 - 2.50	Dark Brown	Sandy Loam	Stones	None
18604544	3C-L4-V	5.20 - 5.20	Grey	Clay	Vegetation	None
18604569	3C-M3	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Stones
18604601	3C-M4	0.70 - 0.70	Dark Brown	Silty Clay Loam	Vegetation	Stones
18604606	3C-M4	1.80 - 1.80	Dark Brown	Loamy Sand	Stones	None
18604610	3C-M4	2.50 - 2.50	Dark Brown	Sandy Loam	Stones	Vegetation
18604575	3C-M3-V	1.70 - 1.70	Dark Brown	Sandy Loam	Vegetation	Stones
18604615	3C-M4-V	4.20 - 4.20	Grey	Clay	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K4	3C-K4	3C-K5	3C-K5	3C-K4-V	3C-K5-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.50 - 1.50	4.00 - 4.00	3.50 - 3.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018
			SDG Ref	181025-118	181025-118	181025-118	181025-118	181025-118	181025-118
			Lab Sample No.(s)	18604550	18604557	18604524	18604583	18604562	18604592
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.3	5.8	9.6	3.4	27	29
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	263 M	119 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0108 M	0.0106 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.255	0.161	0.213	0.16		
Sulphate, Total potential	<0.06 %	TM132		0.765	0.483	0.639	0.48		
Soil Organic Matter (SOM)	<0.35 %	TM132		8.41 #	<0.35 #	2.16 #	4.12 #	3.02 #	4.86 #
pH	1 pH Units	TM133		11.6 M	12.4 M	11.3 M	9.45 M	8.33 M	7.78 M
Cyanide, Total	<1 mg/kg	TM153		1.22 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	<6 M	<6 M	<6 M	11.3 M	11.8 M
Cadmium	<0.02 mg/kg	TM181		1.66 M	1.02 M	1.35 M	1.33 M	0.212 M	0.302 M
Chromium	<0.9 mg/kg	TM181		561 M	423 M	463 M	991 M	34.2 M	37.9 M
Copper	<1.4 mg/kg	TM181		19.2 M	<14 M	32.5 M	<14 M	17.1 M	18.4 M
Iron	<1000 mg/kg	TM181		133000 #	141000 #	113000 #	162000 #	27000 #	28400 #
Lead	<0.7 mg/kg	TM181		114 M	30.7 M	90.5 M	71 M	27.9 M	35.7 M
Manganese	<0.13 mg/kg	TM181		26800 M	29400 M	26600 M	36800 M	393 M	496 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<1.4 M	<1.4 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		15.7 M	10.5 M	21.4 M	8.89 M	33.7 M	32.7 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<10 #	10.1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		416 #	523 #	804 #	582 #	55.7 #	62.1 #
Zinc	<1.9 mg/kg	TM181		396 M	137 M	438 M	278 M	109 M	123 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.305	0.296	0.364	0.224		
Calcium	<21 mg/kg	TM224		190000	233000	226000	219000		
Magnesium	<8 mg/kg	TM224		6910	31700	20900	4350		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0743 M	<0.004 M	0.0872 M	0.0322 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	3C-L4	3C-L4	3C-L4	3C-L4-V	3C-M3	3C-M4
Depth (m)	1.00 - 1.00	2.50 - 2.50	3.00 - 3.00	5.20 - 5.20	0.50 - 0.50	0.70 - 0.70
Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Date Sampled	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
Date Received	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018
SDG Ref	181025-118	181025-118	181025-118	181025-118	181025-118	181025-118
Lab Sample No.(s)	18604620	18604626	18604538	18604544	18604569	18604601
AGS Reference						

Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	13	16	2.1	23	0.68	13
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M	<12 M	35.3 M	79.8 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M	0.0118 M	0.0102 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	0.0115 M	0.0354 M	<0.01 M	<0.01 M	0.0101 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	0.0472 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	0.0944 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132	0.055	0.457			0.137	0.124
Sulphate, Total potential	<0.06 %	TM132	0.165	1.37			0.411	0.372
Soil Organic Matter (SOM)	<0.35 %	TM132	5.24 #	17.9 #	20.9 #	1.39 #	1.09 #	6.05 #
pH	1 pH Units	TM133	8.04 M	12.2 M	12.5 M	7.98 M	9.47 M	8.4 M
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 ♦ M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 ♦ M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181	9.74 M	4.12 M	6.04 M	11.2 M	<6 M	<6 M
Cadmium	<0.02 mg/kg	TM181	0.639 M	<0.02 M	1.66 M	<0.02 M	1.94 M	1.11 M
Chromium	<0.9 mg/kg	TM181	32.8 M	372 M	490 M	36.3 M	560 M	1040 M
Copper	<1.4 mg/kg	TM181	15.5 M	9.82 M	36.4 M	15.4 M	22.3 M	16.4 M
Iron	<1000 mg/kg	TM181	31500 #	99200 #	141000 #	34400 #	112000 #	127000 #
Lead	<0.7 mg/kg	TM181	67.2 M	17.9 M	136 M	24.9 M	121 M	52.8 M
Manganese	<0.13 mg/kg	TM181	947 M	18700 M	27300 M	912 M	23500 M	21700 M
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14 M	<1.4 M	<0.14 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181	32.1 M	8.5 M	31.7 M	40.8 M	22.9 M	18 M
Selenium	<1 mg/kg	TM181	<1 #	7.23 #	<10 #	<1 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181	50.8 #	262 #	557 #	65.5 #	647 #	498 #
Zinc	<1.9 mg/kg	TM181	313 M	44.1 M	164 M	124 M	401 M	203 M
Sulphate, acid soluble (total)	<0.02 %	TM221	0.0583	0.513			0.307	0.12
Calcium	<21 mg/kg	TM224	26400	176000			161000	167000
Magnesium	<8 mg/kg	TM224	9160	12800			11300	10700
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243	0.0834 M	0.168 M			0.0757 M	0.0391 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-M4	3C-M4	3C-M3-V	3C-M4-V		
			Depth (m)	1.80 - 1.80	2.50 - 2.50	1.70 - 1.70	4.20 - 4.20		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	24/10/2018	24/10/2018	24/10/2018	24/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	25/10/2018	25/10/2018	25/10/2018	25/10/2018		
			SDG Ref	181025-118	181025-118	181025-118	181025-118		
			Lab Sample No.(s)	18604606	18604610	18604575	18604615		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	4.5	23	10		
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	77 M	31.5 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		0.0113 M	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M		
Sulphur, Total	<0.02 %	TM132			0.219				
Sulphate, Total potential	<0.06 %	TM132			0.657				
Soil Organic Matter (SOM)	<0.35 %	TM132		21.9 #	0.76 #	1.35 #	1.03 #		
pH	1 pH Units	TM133		12.2 M	11.9 M	7.83 M	8.39 M		
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		7.37 M	2.77 M	12.4 M	6.78 M		
Cadmium	<0.02 mg/kg	TM181		0.427 M	<0.02 M	<0.02 M	0.18 M		
Chromium	<0.9 mg/kg	TM181		629 M	756 M	29.1 M	28.1 M		
Copper	<1.4 mg/kg	TM181		<14 M	6.02 M	10.2 M	7.84 M		
Iron	<1000 mg/kg	TM181		103000 #	156000 #	34300 #	23500 #		
Lead	<0.7 mg/kg	TM181		22.2 M	4.99 M	21.8 M	16.4 M		
Manganese	<0.13 mg/kg	TM181		21300 M	48500 M	724 M	746 M		
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		17.1 M	3.46 M	40.5 M	29.8 M		
Selenium	<1 mg/kg	TM181		12.6 #	11.2 #	<1 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		344 #	672 #	58 #	42.4 #		
Zinc	<1.9 mg/kg	TM181		59.9 M	33 M	112 M	78.6 M		
Sulphate, acid soluble (total)	<0.02 %	TM221			0.329				
Calcium	<21 mg/kg	TM224			288000				
Magnesium	<8 mg/kg	TM224			14600				
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0769 M				

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K4	3C-K4	3C-K5	3C-K5	3C-K4-V	3C-K5-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.50 - 1.50	4.00 - 4.00	3.50 - 3.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018
			SDG Ref	181025-118	181025-118	181025-118	181025-118	181025-118	181025-118
			Lab Sample No.(s)	18604550	18604557	18604524	18604583	18604562	18604592
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.1	83.7	87.5	80.8	85.7	86.9
Acenaphthene-d10 % recovery**	%	TM218		87.9	85.2	88	88.9	95.1	89
Phenanthrene-d10 % recovery**	%	TM218		91	87.6	90.3	92.7	100	92.8
Chrysene-d12 % recovery**	%	TM218		83.4	81.3	86.1	74.2	86.9	88.5
Perylene-d12 % recovery**	%	TM218		78.6	75.3	86.1	70.4	83.9	86.5
Naphthalene	<0.009 mg/kg	TM218		0.868 M	0.17 M	0.0948 M	0.321 M	<0.009 M	0.0166 M
Acenaphthylene	<0.012 mg/kg	TM218		0.155 M	0.0374 M	0.038 M	0.238 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	0.0223 M	0.0864 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0814 M	<0.01 M	0.0292 M	0.186 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		1.14 M	0.501 M	0.273 M	1.37 M	0.0296 M	0.03 M
Anthracene	<0.016 mg/kg	TM218		0.221 M	0.0801 M	0.07 M	0.866 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		1.46 M	0.509 M	0.503 M	2.93 M	0.055 M	0.042 M
Pyrene	<0.015 mg/kg	TM218		1.01 M	0.34 M	0.448 M	2.38 M	0.0375 M	0.037 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.644 M	0.199 M	0.29 M	1.66 M	0.0222 M	0.0219 M
Chrysene	<0.01 mg/kg	TM218		0.729 M	0.246 M	0.35 M	1.83 M	0.0184 M	0.0243 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.961 M	0.27 M	0.446 M	2.3 M	<0.015 M	0.0276 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.334 M	0.103 M	0.16 M	0.783 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.491 M	0.144 M	0.285 M	1.43 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.423 M	0.119 M	0.222 M	1.03 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.109 M	0.0301 M	0.0465 M	0.284 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.408 M	0.124 M	0.235 M	0.927 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		9.03	2.87	3.51	18.6	0.163	0.199

Validated

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-L4	3C-L4	3C-L4	3C-L4-V	3C-M3	3C-M4
			Depth (m)	1.00 - 1.00	2.50 - 2.50	3.00 - 3.00	5.20 - 5.20	0.50 - 0.50	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018
			SDG Ref	181025-118	181025-118	181025-118	181025-118	181025-118	181025-118
			Lab Sample No.(s)	18604620	18604626	18604538	18604544	18604569	18604601
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		80.9	99.4	80.8	90.7	79.2	75.2
Acenaphthene-d10 % recovery**	%	TM218		88.6	91	86.8	85.9	80.4	76.4
Phenanthrene-d10 % recovery**	%	TM218		93.3	92.4	103	86.2	87.1	78.7
Chrysene-d12 % recovery**	%	TM218		79.7	88	96.4	77.7	86.8	72.3
Perylene-d12 % recovery**	%	TM218		74.5	86.5	87.6	83.1	75.9	70.3
Naphthalene	<0.009 mg/kg	TM218		0.03 M	1.96 M	0.336 M	<0.009 M	0.427 M	0.0944 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0138 M	0.226 M	0.0965 M	<0.012 M	0.198 M	0.0202 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.132 M	0.273 M	<0.008 M	0.0271 M	0.0155 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.294 M	0.195 M	<0.01 M	0.114 M	0.0221 M
Phenanthrene	<0.015 mg/kg	TM218		0.0969 M	2.56 M	3.23 M	<0.015 M	0.944 M	0.208 M
Anthracene	<0.016 mg/kg	TM218		0.0202 M	0.758 M	0.599 M	<0.016 M	0.35 M	0.0412 M
Fluoranthene	<0.017 mg/kg	TM218		0.181 M	3.24 M	5.09 M	0.0278 M	2.08 M	0.331 M
Pyrene	<0.015 mg/kg	TM218		0.143 M	2.67 M	4.01 M	0.0241 M	1.61 M	0.282 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0887 M	3.05 M	2.8 M	0.0226 M	1.13 M	0.192 M
Chrysene	<0.01 mg/kg	TM218		0.105 M	2.62 M	2.8 M	0.0258 M	1.06 M	0.214 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.152 M	3.8 M	3.45 M	0.0387 M	1.49 M	0.241 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0506 M	1.48 M	1.41 M	<0.014 M	0.559 M	0.112 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0844 M	2.75 M	2.58 M	<0.015 M	1.06 M	0.206 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0708 M	1.55 M	2.56 M	<0.018 M	1.07 M	0.143 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.69 M	0.564 M	<0.023 M	0.165 M	0.0359 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0675 M	1.73 M	1.85 M	<0.024 M	0.738 M	0.153 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.1	29.5	31.8	0.139	13	2.31

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-M4	3C-M4	3C-M3-V	3C-M4-V		
			Depth (m)	1.80 - 1.80	2.50 - 2.50	1.70 - 1.70	4.20 - 4.20		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	24/10/2018	24/10/2018	24/10/2018	24/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	25/10/2018	25/10/2018	25/10/2018	25/10/2018		
			SDG Ref	181025-118	181025-118	181025-118	181025-118		
			Lab Sample No.(s)	18604606	18604610	18604575	18604615		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.7	80.3	83.2	89.5		
Acenaphthene-d10 % recovery**	%	TM218		90.8	81	82.1	86.6		
Phenanthrene-d10 % recovery**	%	TM218		87.9	83.7	83.7	87		
Chrysene-d12 % recovery**	%	TM218		85.3	79	74.1	76.5		
Perylene-d12 % recovery**	%	TM218		82.3	77.1	78.4	83.2		
Naphthalene	<0.009 mg/kg	TM218		0.254 M	0.277 M	<0.009 M	<0.009 M		
Acenaphthylene	<0.012 mg/kg	TM218		0.0182 M	<0.012 M	<0.012 M	<0.012 M		
Acenaphthene	<0.008 mg/kg	TM218		0.0151 M	0.04 M	<0.008 M	<0.008 M		
Fluorene	<0.01 mg/kg	TM218		0.0349 M	0.0233 M	<0.01 M	<0.01 M		
Phenanthrene	<0.015 mg/kg	TM218		0.466 M	0.411 M	<0.015 M	<0.015 M		
Anthracene	<0.016 mg/kg	TM218		0.0527 M	0.0565 M	<0.016 M	<0.016 M		
Fluoranthene	<0.017 mg/kg	TM218		0.329 M	0.494 M	<0.017 M	<0.017 M		
Pyrene	<0.015 mg/kg	TM218		0.269 M	0.493 M	<0.015 M	<0.015 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		0.15 M	0.288 M	<0.014 M	<0.014 M		
Chrysene	<0.01 mg/kg	TM218		0.171 M	0.404 M	<0.01 M	<0.01 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.148 M	0.291 M	<0.015 M	<0.015 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0639 M	0.134 M	<0.014 M	<0.014 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.127 M	0.252 M	<0.015 M	<0.015 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0836 M	0.169 M	<0.018 M	<0.018 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.0449 M	<0.023 M	<0.023 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0933 M	0.193 M	<0.024 M	<0.024 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2.28	3.57	<0.118	<0.118		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K4	3C-K4	3C-K5	3C-K5	3C-K4-V	3C-K5-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.50 - 1.50	4.00 - 4.00	3.50 - 3.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018
			SDG Ref	181025-118	181025-118	181025-118	181025-118	181025-118	181025-118
			Lab Sample No.(s)	18604550	18604557	18604524	18604583	18604562	18604592
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		41.8	76.3	94.2	36.1	108	126
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 #	<0.2 M	<0.2 M	<0.2 #	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0367	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0291	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.027	<0.02	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.65	1.19	<0.1	1.22	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		13	4.04	2.39	8.17	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		45	47.9	25.7	46.9	<0.1	2.26
Aliphatics >C35-C44	<0.1 mg/kg	TM173		6.4	2.94	8.03	9.21	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		67	56.1	36.1	65.5	<0.1	2.26
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		4.66	2.5	<0.1	2.19	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		22	6.03	4.04	15	<0.1	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		71.7	25.3	29.4	69.9	3.74	9.45
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		21.2	7.13	11.1	21.9	0.547	1.99
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.82	2.65	4.19	8.11	<0.1	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		120	40.9	44.6	109	4.28	11.4
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		187	97	80.6	175	4.28	13.7

Validated

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-L4	3C-L4	3C-L4	3C-L4-V	3C-M3	3C-M4
			Depth (m)	1.00 - 1.00	2.50 - 2.50	3.00 - 3.00	5.20 - 5.20	0.50 - 0.50	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018
			SDG Ref	181025-118	181025-118	181025-118	181025-118	181025-118	181025-118
			Lab Sample No.(s)	18604620	18604626	18604538	18604544	18604569	18604601
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		91	18.4	86.9	104	64.7	45.2
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	1.12 #	<0.2 M	<0.2 M	<0.2 #	<0.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	0.0507	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.247	<0.02	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.204	<0.02	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	0.236	<0.02	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	19.4	19.7	0.415	1.4	0.972
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	132	433	1.63	8.37	3.24
Aliphatics >C21-C35	<0.1 mg/kg	TM173		7.99	93.2	151	3.89	42.7	16.4
Aliphatics >C35-C44	<0.1 mg/kg	TM173		0.94	13.3	30.2	<0.1	11.6	5.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		8.93	258	633	5.94	64	25.8
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	0.0224	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.0696	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.137	<0.02	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	0.157	<0.02	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	26.7	7.58	<0.1	2.41	1.08
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.817	158	124	0.633	18.2	4.68
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		16.2	638	199	5.67	74.7	26.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		8.05	181	43.5	0.537	27.4	9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.62	56.8	16.2	<0.1	10.7	3.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		25.1	1000	374	6.84	123	41.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		34	1260	1010	12.8	187	66.8

Validated

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-M4	3C-M4	3C-M3-V	3C-M4-V		
			Depth (m)	1.80 - 1.80	2.50 - 2.50	1.70 - 1.70	4.20 - 4.20		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	24/10/2018	24/10/2018	24/10/2018	24/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	25/10/2018	25/10/2018	25/10/2018	25/10/2018		
			SDG Ref	181025-118	181025-118	181025-118	181025-118		
			Lab Sample No.(s)	18604606	18604610	18604575	18604615		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		14.3	90.5	126	101		
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.279 #	<0.2 M	<0.1 M	<0.2 M		
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.01	<0.02		
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0746	<0.02	<0.01	<0.02		
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0576	<0.02	<0.01	<0.02		
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0565	<0.02	<0.01	<0.02		
Aliphatics >C12-C16	<0.1 mg/kg	TM173		19.2	0.96	<0.1	<0.1		
Aliphatics >C16-C21	<0.1 mg/kg	TM173		18.7	8.37	<0.1	<0.1		
Aliphatics >C21-C35	<0.1 mg/kg	TM173		29.7	41.8	<0.1	<0.1		
Aliphatics >C35-C44	<0.1 mg/kg	TM173		5.98	13.9	<0.1	<0.1		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		73.6	65.1	<0.1	<0.1		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.01	<0.02		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.01	<0.02		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0384	<0.02	<0.01	<0.02		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0373	<0.02	<0.01	<0.02		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		31.3	<0.1	<0.1	<0.1		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		38.9	10.3	0.992	1		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		78	52.5	4.69	6.69		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		22.7	14.6	3.16	<0.1		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		8.1	5.45	1.32	<0.1		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		171	77.4	8.85	7.69		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		245	142	8.85	7.69		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-K4	3C-K4	3C-K5	3C-K5	3C-K4-V	3C-K5-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.50 - 1.50	4.00 - 4.00	3.50 - 3.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018
			SDG Ref	181025-118	181025-118	181025-118	181025-118	181025-118	181025-118
			Lab Sample No.(s)	18604550	18604557	18604524	18604583	18604562	18604592
			AGS Reference						
Dibromofluoromethane**	%	TM116		99.5	94	103	106	105	113
Toluene-d8**	%	TM116		88.9	89.1	96	96.9	95.6	98.8
4-Bromofluorobenzene**	%	TM116		74.9	91.8	106	92.5	105	88.8
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.2 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.18 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.14 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.08 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.2 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.2 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.194 M	<0.13 M	<0.13 M	<0.26 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.8	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-L4	3C-L4	3C-L4	3C-L4-V	3C-M3	3C-M4
			Depth (m)	1.00 - 1.00	2.50 - 2.50	3.00 - 3.00	5.20 - 5.20	0.50 - 0.50	0.70 - 0.70
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018	24/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018	25/10/2018
			SDG Ref	181025-118	181025-118	181025-118	181025-118	181025-118	181025-118
			Lab Sample No.(s)	18604620	18604626	18604538	18604544	18604569	18604601
			AGS Reference						
Dibromofluoromethane**	%	TM116		101	92.3	105	104	103	111
Toluene-d8**	%	TM116		92.5	88	87.6	95.4	94.9	98.7
4-Bromofluorobenzene**	%	TM116		96.7	70.5	95.7	108	98.7	95.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<0.1 M	<0.1 M	<0.2 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.18 M	<0.09 M	<0.09 M	<0.09 M	<0.18 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	0.175 M	<0.07 M	<0.07 M	<0.07 M	<0.14 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.08 M	<0.04 M	<0.04 M	<0.04 M	<0.08 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.2 #	<0.1 #	<0.1 #	<0.1 #	<0.2 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.2 M	<0.1 M	<0.1 M	<0.1 M	<0.2 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	1.07 M	<0.13 M	<0.13 M	<0.13 M	<0.26 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.8	<0.4	<0.4	<0.4	<0.8

Validated

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	3C-M4	3C-M4	3C-M3-V	3C-M4-V		
			Depth (m)	1.80 - 1.80	2.50 - 2.50	1.70 - 1.70	4.20 - 4.20		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	24/10/2018	24/10/2018	24/10/2018	24/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	25/10/2018	25/10/2018	25/10/2018	25/10/2018		
			SDG Ref	181025-118	181025-118	181025-118	181025-118		
			Lab Sample No.(s)	18604606	18604610	18604575	18604615		
			AGS Reference						
Dibromofluoromethane**	%	TM116		110	79.5	107	103		
Toluene-d8**	%	TM116		98.7	86.1	95.8	96.5		
4-Bromofluorobenzene**	%	TM116		101	78	107	109		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<2 M	<0.1 M	<0.1 M	<0.1 M		
Benzene	<0.009 mg/kg	TM116		<1.8 M	<0.09 M	<0.09 M	<0.09 M		
Toluene	<0.007 mg/kg	TM116		<1.4 M	<0.07 M	<0.07 M	<0.07 M		
Ethylbenzene	<0.004 mg/kg	TM116		<0.8 M	<0.04 M	<0.04 M	<0.04 M		
p/m-Xylene	<0.01 mg/kg	TM116		<2 #	<0.1 #	<0.1 #	<0.1 #		
o-Xylene	<0.01 mg/kg	TM116		<2 M	<0.1 M	<0.1 M	<0.1 M		
Naphthalene	<0.013 mg/kg	TM116		<2.6 M	0.245 M	<0.13 M	<0.13 M		
Sum of BTEX	<0.04 mg/kg	TM116		<8	<0.4	<0.4	<0.4		

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-K4 0.50 - 0.50 SOLID 24/10/2018 00:00:00 25/10/2018 17:57:10 181025-118 18604550 TM048	07/11/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-K4 1.00 - 1.00 SOLID 24/10/2018 00:00:00 25/10/2018 20:25:19 181025-118 18604557 TM048	30/10/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-K5 0.50 - 0.50 SOLID 24/10/2018 00:00:00 25/10/2018 20:23:35 181025-118 18604524 TM048	30/10/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-K5 1.50 - 1.50 SOLID 24/10/2018 00:00:00 25/10/2018 17:58:46 181025-118 18604583 TM048	07/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-L4 1.00 - 1.00 SOLID 24/10/2018 00:00:00 25/10/2018 20:54:05 181025-118 18604620 TM048	31/10/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-L4 2.50 - 2.50 SOLID 24/10/2018 00:00:00 25/10/2018 20:58:28 181025-118 18604626 TM048	07/11/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181025-118 **Client Reference:** **Report Number:** 480980
Location: Llanwern **Order Number:** LLA497 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-M3 0.50 - 0.50 SOLID 24/10/2018 00:00:00 25/10/2018 20:27:06 181025-118 18604569 TM048	29/10/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-M4 0.70 - 0.70 SOLID 24/10/2018 00:00:00 25/10/2018 21:10:01 181025-118 18604601 TM048	07/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	3C-M4 2.50 - 2.50 SOLID 24/10/2018 00:00:00 25/10/2018 21:12:05 181025-118 18604610 TM048	07/11/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604524
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-K5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	1.71	<0.2	17.1	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00147	<0.0005	0.0147	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00303	<0.001	0.0303	<0.01	-	-	-
Copper	0.0101	<0.0003	0.101	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00187	<0.0004	0.0187	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0535	<0.001	0.535	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.98
Conductivity (µS/cm)	414.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

14/11/2018 11:18:27

11:18:00 14/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604524
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-K5
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.98
Conductivity (µS/cm)	414.00
Temperature (°C)	18.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.9
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604538
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-L4
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00078	<0.0005	0.0078	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.015	<0.001	0.15	<0.01	-	-	-
Copper	0.000812	<0.0003	0.00812	<0.003	-	-	-
Lead	0.0145	<0.0002	0.145	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.002	<0.001	0.02	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000659	<0.0001	0.00659	<0.001	-	-	-
Acenaphthene by GCMS	0.000164	<0.00005	0.00164	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.00272	<0.00005	0.0272	<0.0005	-	-	-
Anthracene by GCMS	0.000447	<0.00005	0.00447	<0.0005	-	-	-
Phenanthrene by GCMS	0.00812	<0.00005	0.0812	<0.0005	-	-	-
Fluorene by GCMS	0.000102	<0.00005	0.00102	<0.0005	-	-	-
Chrysene by GCMS	0.000116	<0.00005	0.00116	<0.0005	-	-	-
Pyrene by GCMS	0.00165	<0.00005	0.0165	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.0000717	<0.00005	0.000717	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.014	<0.00082	0.14	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	11.77
Conductivity (µS/cm)	2,460.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	2.15
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	97.9
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604538
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-L4
Depth (m)	3.00 - 3.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.021	<0.01	0.21	<0.1	-	-	-
Aromatics >EC16-EC21	0.148	<0.01	1.48	<0.1	-	-	-
Aromatics >EC21-EC35	0.026	<0.01	0.26	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.195	<0.01	1.95	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.195	<0.01	1.95	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	11.77
Conductivity (µS/cm)	2,460.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604550
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-K4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00176	<0.0005	0.0176	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00682	<0.001	0.0682	<0.01	-	-	-
Copper	0.0135	<0.0003	0.135	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00182	<0.0004	0.0182	<0.004	-	-	-
Selenium	0.00174	<0.001	0.0174	<0.01	-	-	-
Vanadium	0.04	<0.001	0.4	<0.01	-	-	-
Zinc	0.00128	<0.001	0.0128	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000932	<0.0005	0.00932	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	499.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604550
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-K4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	499.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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11:18:00 14/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.16
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.2
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604557
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-K4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00113	<0.0005	0.0113	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0026	<0.001	0.026	<0.01	-	-	-
Copper	0.0221	<0.0003	0.221	<0.003	-	-	-
Lead	0.00024	<0.0002	0.0024	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00289	<0.0004	0.0289	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00499	<0.001	0.0499	<0.01	-	-	-
Zinc	0.00446	<0.001	0.0446	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00318	<0.0005	0.0318	<0.005	-	-	-
Acenaphthene by GCMS	0.0018	<0.00025	0.018	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	0.000679	<0.00025	0.00679	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	0.000503	<0.00025	0.00503	<0.0025	-	-	-
Fluorene by GCMS	0.000251	<0.00025	0.00251	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	0.000486	<0.00025	0.00486	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	0.0069	<0.0041	0.069	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	12.02
Conductivity (µS/cm)	1,830.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.16
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.2
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604557
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-K4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	12.02
Conductivity (µS/cm)	1,830.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	0.685
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.3
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604569
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-M3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00626	<0.0005	0.0626	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00339	<0.0003	0.0339	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000463	<0.0004	0.00463	<0.004	-	-	-
Selenium	0.00173	<0.001	0.0173	<0.01	-	-	-
Vanadium	0.132	<0.001	1.32	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000501	<0.0005	0.00501	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	0.0003	<0.00025	0.003	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	0.000256	<0.00025	0.00256	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	0.000252	<0.00025	0.00252	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	0.000108	<0.0001	0.00108	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.11
Conductivity (µS/cm)	150.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.091	**Natural Moisture Content (%)**	0.685
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	99.3
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604569
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-M3
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	10.11
Conductivity (µS/cm)	150.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.899

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.52
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.6
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604583
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-K5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00497	<0.0005	0.0497	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00206	<0.001	0.0206	<0.01	-	-	-
Copper	0.00145	<0.0003	0.0145	<0.003	-	-	-
Lead	0.000354	<0.0002	0.00354	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00301	<0.001	0.0301	<0.01	-	-	-
Vanadium	0.0692	<0.001	0.692	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00157	<0.0005	0.0157	<0.005	-	-	-
Acenaphthene by GCMS	0.000424	<0.00025	0.00424	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	0.000335	<0.00025	0.00335	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	9.46
Conductivity (µS/cm)	146.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.093	**Natural Moisture Content (%)**	3.52
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.6
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604583
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-K5
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	9.46
Conductivity (µS/cm)	146.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.897

Mcerts Certification does not apply to leachates

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11:18:00 14/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604601
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-M4
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00455	<0.0005	0.0455	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0053	<0.0003	0.053	<0.003	-	-	-
Lead	0.000754	<0.0002	0.00754	<0.002	-	-	-
Manganese	0.00353	<0.003	0.0353	<0.03	-	-	-
Nickel	0.00138	<0.0004	0.0138	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0079	<0.001	0.079	<0.01	-	-	-
Zinc	0.00107	<0.001	0.0107	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.916	<0.019	9.16	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	0.000755	<0.00025	0.00755	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.46
Conductivity (µS/cm)	136.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604601
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-M4
Depth (m)	0.70 - 0.70

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	8.46
Conductivity (µS/cm)	136.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604606
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-M4
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00205	<0.0005	0.0205	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0162	<0.001	0.162	<0.01	-	-	-
Copper	0.0245	<0.0003	0.245	<0.003	-	-	-
Lead	0.0003	<0.0002	0.003	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0019	<0.0004	0.019	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00186	<0.001	0.0186	<0.01	-	-	-
Zinc	0.00267	<0.001	0.0267	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	11.91
Conductivity (µS/cm)	3,210.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604606
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-M4
Depth (m)	1.80 - 1.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	11.91
Conductivity (µS/cm)	3,210.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604610
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-M4
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00595	<0.0005	0.0595	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00812	<0.001	0.0812	<0.01	-	-	-
Copper	0.00814	<0.0003	0.0814	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0011	<0.0004	0.011	<0.004	-	-	-
Selenium	0.00125	<0.001	0.0125	<0.01	-	-	-
Vanadium	0.124	<0.001	1.24	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000644	<0.0005	0.00644	<0.005	-	-	-
Acenaphthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Acenaphthylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Phenanthrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Fluorene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Chrysene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benz(a)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
PAH 16 EPA Total by GCMS	<0.0041	<0.0041	<0.041	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	9.97
Conductivity (µS/cm)	178.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604610
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-M4
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C16-C21	<0.5	<0.5	<5	<5	-	-	-
Aliphatics >C21-C35	<0.5	<0.5	<5	<5	-	-	-
Total Aliphatics >C12-C35	<0.5	<0.5	<5	<5	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC16-EC21	<0.5	<0.5	<5	<5	-	-	-
Aromatics >EC21-EC35	<0.5	<0.5	<5	<5	-	-	-
Total Aromatics >EC12-EC35	<0.5	<0.5	<5	<5	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.5	<0.5	<5	<5	-	-	-

Leach Test Information

Date Prepared	27-Oct-2018
pH (pH Units)	9.97
Conductivity (µS/cm)	178.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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11:18:00 14/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604620
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-L4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000997	<0.0005	0.00997	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.0052	<0.0003	0.052	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0016	<0.0004	0.016	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00111	<0.001	0.0111	<0.01	-	-	-
Zinc	0.00733	<0.001	0.0733	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	8.57
Conductivity (µS/cm)	178.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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11:18:00 14/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604620
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-L4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	8.57
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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604626
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-L4
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00086	<0.0005	0.0086	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00702	<0.001	0.0702	<0.01	-	-	-
Copper	0.0123	<0.0003	0.123	<0.003	-	-	-
Lead	0.000338	<0.0002	0.00338	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00124	<0.0004	0.0124	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0086	<0.001	0.086	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000226	<0.00005	0.00226	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000178	<0.00005	0.00178	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000189	<0.00005	0.00189	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	11.76
Conductivity (µS/cm)	1,110.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181025-118
Lab Sample Number(s)	18604626
Sampled Date	24-Oct-2018
Customer Sample Ref.	3C-L4
Depth (m)	2.50 - 2.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	31-Oct-2018
pH (pH Units)	11.76
Conductivity (µS/cm)	1,110.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181025-118	**Client Reference:**		**Report Number:**	480980
Location:	Llanwern	**Order Number:**	LLA497	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	18604550	18604557	18604524	18604583	18604562	18604592	18604538	18604620	18604626	18604544
Customer Sample Ref.	3C-K4	3C-K4	3C-K5	3C-K5	3C-K4-V	3C-K5-V	3C-L4	3C-L4	3C-L4	3C-L4-V
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.50 - 1.50	4.00 - 4.00	3.50 - 3.50	3.00 - 3.00	1.00 - 1.00	2.50 - 2.50	5.20 - 5.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018				07-Nov-2018	07-Nov-2018	
Ammoniacal Nitrogen	07-Nov-2018	07-Nov-2018	05-Nov-2018	07-Nov-2018			06-Nov-2018	06-Nov-2018	06-Nov-2018	
Ammonium Soil by Titration	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018
Anions by Kone (soil)	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018				07-Nov-2018	07-Nov-2018	
Asbestos ID in Solid Samples	07-Nov-2018	30-Oct-2018	30-Oct-2018	07-Nov-2018				31-Oct-2018	07-Nov-2018	
CEN 10:1 Leachate (1 Stage)	27-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018			31-Oct-2018	31-Oct-2018	01-Nov-2018	
CEN Readings	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018			03-Nov-2018	03-Nov-2018	03-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	14-Nov-2018	12-Nov-2018	12-Nov-2018
Dissolved Metals by ICP-MS	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018			07-Nov-2018	07-Nov-2018	07-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	08-Nov-2018	08-Nov-2018	02-Nov-2018	08-Nov-2018			06-Nov-2018	06-Nov-2018	06-Nov-2018	
EPH CWG (Aliphatic) GC (S)	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	02-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	08-Nov-2018	08-Nov-2018	02-Nov-2018	08-Nov-2018			06-Nov-2018	06-Nov-2018	06-Nov-2018	
EPH CWG (Aromatic) GC (S)	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	29-Oct-2018	02-Nov-2018
GRO by GC-FID (S)	06-Nov-2018	04-Nov-2018	04-Nov-2018	07-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	06-Nov-2018	07-Nov-2018	04-Nov-2018
GRO by GC-FID (W)	04-Nov-2018	04-Nov-2018	05-Nov-2018	04-Nov-2018			04-Nov-2018	04-Nov-2018	04-Nov-2018	
Mercury Dissolved	06-Nov-2018	06-Nov-2018	08-Nov-2018	06-Nov-2018			07-Nov-2018	09-Nov-2018	08-Nov-2018	
Metals in solid samples by OES	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	30-Oct-2018	06-Nov-2018	06-Nov-2018
PAH by GCMS	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	30-Oct-2018	07-Nov-2018	02-Nov-2018
PAH Spec MS - Aqueous (W)	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018			06-Nov-2018	06-Nov-2018	06-Nov-2018	
pH	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018
pH Value	07-Nov-2018	07-Nov-2018	06-Nov-2018	07-Nov-2018			07-Nov-2018	06-Nov-2018	07-Nov-2018	
Phenols by HPLC (S)	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
Sample description	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018
Total Organic Carbon	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018
Total Sulphate	05-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018				02-Nov-2018	02-Nov-2018	
Total Sulphur	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018				01-Nov-2018	31-Oct-2018	
TPH CWG (W)	08-Nov-2018	08-Nov-2018	05-Nov-2018	08-Nov-2018			06-Nov-2018	06-Nov-2018	06-Nov-2018	
TPH CWG GC (S)	06-Nov-2018	04-Nov-2018	04-Nov-2018	07-Nov-2018	04-Nov-2018	04-Nov-2018	04-Nov-2018	06-Nov-2018	07-Nov-2018	04-Nov-2018
VOC MS (S)	04-Nov-2018	05-Nov-2018	05-Nov-2018	07-Nov-2018	05-Nov-2018	04-Nov-2018	05-Nov-2018	05-Nov-2018	07-Nov-2018	05-Nov-2018

Lab Sample No(s)	18604569	18604601	18604606	18604610	18604575	18604615
Customer Sample Ref.	3C-M3	3C-M4	3C-M4	3C-M4	3C-M3-V	3C-M4-V
AGS Ref.						
Depth	0.50 - 0.50	0.70 - 0.70	1.80 - 1.80	2.50 - 2.50	1.70 - 1.70	4.20 - 4.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	31-Oct-2018	31-Oct-2018		08-Nov-2018		
Ammoniacal Nitrogen	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018		
Ammonium Soil by Titration	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018
Anions by Kone (soil)	07-Nov-2018	07-Nov-2018		07-Nov-2018		
Asbestos ID in Solid Samples	29-Oct-2018	07-Nov-2018		07-Nov-2018		
CEN 10:1 Leachate (1 Stage)	27-Oct-2018	27-Oct-2018	27-Oct-2018	27-Oct-2018		
CEN Readings	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018		
Cyanide Comp/Free/Total/Thiocyanate	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Dissolved Metals by ICP-MS	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018		
EPH CWG (Aliphatic) Aqueous GC (W)	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018		
EPH CWG (Aliphatic) GC (S)	29-Oct-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018		
EPH CWG (Aromatic) GC (S)	29-Oct-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018
GRO by GC-FID (S)	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	04-Nov-2018	06-Nov-2018
GRO by GC-FID (W)	05-Nov-2018	05-Nov-2018	05-Nov-2018	04-Nov-2018		
Mercury Dissolved	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018		
Metals in solid samples by OES	31-Oct-2018	31-Oct-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	31-Oct-2018
PAH by GCMS	30-Oct-2018	06-Nov-2018	07-Nov-2018	06-Nov-2018	02-Nov-2018	02-Nov-2018
PAH Spec MS - Aqueous (W)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018		
pH	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018	08-Nov-2018	07-Nov-2018
pH Value	07-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018		
Phenols by HPLC (S)	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
Sample description	25-Oct-2018	25-Oct-2018	26-Oct-2018	26-Oct-2018	30-Oct-2018	26-Oct-2018
Total Organic Carbon	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018
Total Sulphate	02-Nov-2018	02-Nov-2018		02-Nov-2018		
Total Sulphur	01-Nov-2018	01-Nov-2018		31-Oct-2018		
TPH CWG (W)	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018		
TPH CWG GC (S)	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	04-Nov-2018	06-Nov-2018
VOC MS (S)	03-Nov-2018	07-Nov-2018	07-Nov-2018	06-Nov-2018	03-Nov-2018	05-Nov-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	15 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181031-51
Your Reference:	
Location:	Llanwern
Report No:	481247

This report has been revised and directly supersedes 480708 in its entirety.

We received 28 samples on Wednesday October 31, 2018 and 28 of these samples were scheduled for analysis which was completed on Thursday November 15, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18639087	4E-C4		0.50 - 0.50	30/10/2018
18639150	4E-C4		1.00 - 1.00	30/10/2018
18639228	4E-C4-V		2.25 - 2.25	30/10/2018
18639237	4E-D4		0.50 - 0.50	30/10/2018
18639243	4E-D4		1.20 - 1.20	30/10/2018
18639248	4E-D4-V		2.10 - 2.10	30/10/2018
18639252	4E-E4		0.50 - 0.50	30/10/2018
18639257	4E-E4		1.00 - 1.00	30/10/2018
18639262	4E-E4		1.50 - 1.50	30/10/2018
18639127	4E-E5		0.20 - 0.20	30/10/2018
18639132	4E-E5		0.80 - 0.80	30/10/2018
18639144	4E-E6		0.25 - 0.25	30/10/2018
18639155	4E-E6		0.80 - 0.80	30/10/2018
18639201	4E-E7		0.30 - 0.30	30/10/2018
18639205	4E-E7		0.80 - 0.80	30/10/2018
18639218	4E-E4-V		2.10 - 2.10	30/10/2018
18639137	4E-E5-V		1.95 - 1.95	30/10/2018
18639169	4E-E6-V		1.80 - 1.80	30/10/2018
18639212	4E-E7-V		1.75 - 1.75	30/10/2018
18639092	4E-F4		0.50 - 0.50	30/10/2018
18639099	4E-F4		1.00 - 1.00	30/10/2018
18639174	4E-F6		0.30 - 0.30	30/10/2018
18639180	4E-F6		0.80 - 0.80	30/10/2018
18639105	4E-F4-V		2.10 - 2.10	30/10/2018
18639188	4E-F6-V		1.55 - 1.55	30/10/2018
18639109	4E-G4		0.50 - 0.50	30/10/2018
18639115	4E-G4		1.00 - 1.00	30/10/2018
18639121	4E-G4-V		1.90 - 1.90	30/10/2018

Maximum Sample/Coolbox Temperature (°C) : **6.8**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	18639087			18639150			18639228		18639237			18639243			18639248		18639252		
			Customer Sample Reference	4E-C4			4E-C4			4E-C4-V		4E-D4			4E-D4			4E-D4-V		4E-E4		
			AGS Reference																			
			Depth (m)	0.50 - 0.50			1.00 - 1.00			2.25 - 2.25		0.50 - 0.50			1.20 - 1.20			2.10 - 2.10		0.50 - 0.50		
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10			X								X								X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 19		X			X					X			X					X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 28			X			X		X			X			X		X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 10			X								X								X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10		X								X								X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 2																				
Calorific Value (S)*	All	NDPs: 0 Tests: 1																				
CEN Readings	All	NDPs: 0 Tests: 19		X			X					X			X					X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 47		X	X		X	X		X		X	X		X	X		X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 19		X			X					X			X					X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19		X			X					X			X					X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 28			X			X		X			X			X		X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19		X			X					X			X					X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 28			X			X		X			X			X		X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 28				X			X		X			X			X		X			X

18639201	4E-E7		0.30 - 0.30	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S	X		X	X					X			X			X		X	
				1kg TUB	S		X			X	X		X	X	X	X		X				
18639155	4E-E6		0.80 - 0.80	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X						X			X			X		X	
				1kg TUB	S		X						X	X	X	X		X				
18639144	4E-E6		0.25 - 0.25	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S	X		X	X					X			X			X		X	
				1kg TUB	S		X			X	X		X	X	X	X		X				
18639132	4E-E5		0.80 - 0.80	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X						X			X			X		X	
				1kg TUB	S		X						X	X	X	X		X				
18639127	4E-E5		0.20 - 0.20	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S	X		X	X					X			X			X		X	
				1kg TUB	S		X			X			X	X	X	X		X				
18639262	4E-E4		1.50 - 1.50	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S	X		X	X					X			X			X		X	
				1kg TUB	S		X			X			X	X	X	X		X				
18639257	4E-E4		1.00 - 1.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S			X				X		X			X			X		X	
				1kg TUB	S		X						X	X	X	X		X				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18639087			18639150			18639228			18639237			18639243			18639248			18639252		
Customer Sample Reference			4E-C4			4E-C4			4E-C4-V			4E-D4			4E-D4			4E-D4-V			4E-E4		
AGS Reference																							
Depth (m)			0.50 - 0.50			1.00 - 1.00			2.25 - 2.25			0.50 - 0.50			1.20 - 1.20			2.10 - 2.10			0.50 - 0.50		
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)		
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
GRO by GC-FID (W)	All	NDPs: 0 Tests: 19	X			X					X			X					X				
Mercury Dissolved	All	NDPs: 0 Tests: 19	X			X					X			X					X				
Metals in solid samples by OES	All	NDPs: 0 Tests: 28		X			X		X			X			X		X			X			
PAH by GCMS	All	NDPs: 0 Tests: 28		X			X		X			X			X		X			X			
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 19	X			X					X			X					X				
pH	All	NDPs: 0 Tests: 28		X			X		X			X			X		X			X			
pH Value	All	NDPs: 0 Tests: 19	X			X					X			X					X				
Phenols by HPLC (S)	All	NDPs: 0 Tests: 28		X			X		X			X			X		X			X			
Sample description	All	NDPs: 0 Tests: 28		X			X		X			X			X		X			X			
Total Organic Carbon	All	NDPs: 0 Tests: 28		X			X		X			X			X		X			X			
Total Sulphate	All	NDPs: 0 Tests: 10		X								X								X			
Total Sulphur	All	NDPs: 0 Tests: 10		X								X								X			
TPH CWG (W)	All	NDPs: 0 Tests: 19	X			X					X			X					X				
TPH CWG GC (S)	All	NDPs: 0 Tests: 28		X			X		X			X			X		X			X			
VOC MS (S)	All	NDPs: 0 Tests: 28			X			X		X			X			X		X						X

18639201	4E-E7		0.30 - 0.30	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x	x			x		x							x				
18639155	4E-E6		0.80 - 0.80	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x						x		
				1kg TUB	S	x	x			x		x							x				
18639144	4E-E6		0.25 - 0.25	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x	x			x		x							x				
18639132	4E-E5		0.80 - 0.80	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x						x		
				1kg TUB	S	x	x			x		x							x				
18639127	4E-E5		0.20 - 0.20	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x	x			x		x							x				
18639262	4E-E4		1.50 - 1.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x	x			x		x							x				
18639257	4E-E4		1.00 - 1.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S			x	x		x		x	x	x						x		
				1kg TUB	S	x	x			x		x							x				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18639205		18639218		18639137		18639169		18639212		18639092			18639099		18639174	
Customer Sample Reference			4E-E7		4E-E4-V		4E-E5-V		4E-E6-V		4E-E7-V		4E-F4			4E-F4		4E-F6	
AGS Reference																			
Depth (m)			0.80 - 0.80		2.10 - 2.10		1.95 - 1.95		1.80 - 1.80		1.75 - 1.75		0.50 - 0.50			1.00 - 1.00		0.30 - 0.30	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10															X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 19	X										X			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 28		X		X		X		X		X		X			X				X
Anions by Kone (soil)	All	NDPs: 0 Tests: 10															X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10														X					
CEN Readings	All	NDPs: 0 Tests: 19	X										X			X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 47	X	X		X		X		X		X	X	X		X	X		X	X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 19	X										X			X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19	X										X			X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 28		X		X		X		X		X		X			X				X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 19	X										X			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 28		X		X		X		X		X		X			X				X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 28			X		X		X		X				X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 19	X										X			X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 19	X										X			X			X		

18639121	4E-G4-V		1.90 - 1.90	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S			X				X			X		X					
18639115	4E-G4		1.00 - 1.00	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X	
18639109	4E-G4		0.50 - 0.50	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S			X				X			X		X					
				1kg TUB	S		X				X	X	X	X		X				X	X	
18639188	4E-F6-V		1.55 - 1.55	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S			X				X			X		X					
18639105	4E-F4-V		2.10 - 2.10	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S			X				X			X		X					
18639180	4E-F6		0.80 - 0.80	60g VOC (ALE215)	S														X			
				250g Amber Jar (ALE210)	S	X		X	X			X			X		X					
				1kg TUB	S		X			X	X	X	X	X		X				X	X	
18639174	4E-F6		0.30 - 0.30	60g VOC (ALE215)	S														X			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18639205		18639218		18639137		18639169		18639212		18639092			18639099		18639174	
Customer Sample Reference			4E-E7		4E-E4-V		4E-E5-V		4E-E6-V		4E-E7-V		4E-F4			4E-F4		4E-F6	
AGS Reference																			
Depth (m)			0.80 - 0.80		2.10 - 2.10		1.95 - 1.95		1.80 - 1.80		1.75 - 1.75		0.50 - 0.50			1.00 - 1.00		0.30 - 0.30	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 28		X		X		X		X		X			X			X		X
PAH by GCMS	All	NDPs: 0 Tests: 28		X		X		X		X		X			X			X		X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 19	X											X			X			X	
pH	All	NDPs: 0 Tests: 28		X		X		X		X		X			X			X			X
pH Value	All	NDPs: 0 Tests: 19	X											X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 28		X		X		X		X		X			X			X			X
Sample description	All	NDPs: 0 Tests: 28		X		X		X		X		X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 28		X		X		X		X		X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 10																X			
Total Sulphur	All	NDPs: 0 Tests: 10																X			
TPH CWG (W)	All	NDPs: 0 Tests: 19	X											X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 28		X		X		X		X		X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 28			X		X		X		X		X			X			X		

18639121	4E-G4-V		1.90 - 1.90	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
18639115	4E-G4		1.00 - 1.00	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		X
18639109	4E-G4		0.50 - 0.50	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		X
18639188	4E-F6-V		1.55 - 1.55	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
18639105	4E-F4-V		2.10 - 2.10	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
18639180	4E-F6		0.80 - 0.80	60g VOC (ALE215)	S		X
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S		X
18639174	4E-F6		0.30 - 0.30	60g VOC (ALE215)	S		X

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18639087	4E-C4	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
18639150	4E-C4	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Vegetation
18639228	4E-C4-V	2.25 - 2.25	Dark Brown	Silty Clay	None	Vegetation
18639237	4E-D4	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18639243	4E-D4	1.20 - 1.20	Dark Brown	Sandy Loam	Vegetation	Stones
18639248	4E-D4-V	2.10 - 2.10	Dark Brown	Silty Clay	None	None
18639252	4E-E4	0.50 - 0.50	Black	Sand	Stones	Vegetation
18639257	4E-E4	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18639262	4E-E4	1.50 - 1.50	Dark Brown	Sandy Loam	Vegetation	Stones
18639127	4E-E5	0.20 - 0.20	Dark Brown	Sandy Loam	Vegetation	Stones
18639132	4E-E5	0.80 - 0.80	Dark Brown	Sandy Loam	Stones	Brick
18639144	4E-E6	0.25 - 0.25	Dark Brown	Sandy Loam	Vegetation	Stones
18639155	4E-E6	0.80 - 0.80	Dark Brown	Sand	Vegetation	Stones
18639201	4E-E7	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	None
18639205	4E-E7	0.80 - 0.80	Dark Brown	Sandy Loam	Stones	None
18639218	4E-E4-V	2.10 - 2.10	Dark Brown	Sandy Clay Loam	Vegetation	Stones
18639137	4E-E5-V	1.95 - 1.95	Grey	Silty Clay Loam	None	None
18639169	4E-E6-V	1.80 - 1.80	Grey	Clay	None	None
18639212	4E-E7-V	1.75 - 1.75	Dark Brown	Silty Clay Loam	None	None
18639092	4E-F4	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18639099	4E-F4	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18639174	4E-F6	0.30 - 0.30	Grey	Sandy Loam	Stones	None
18639180	4E-F6	0.80 - 0.80	Dark Brown	Sandy Loam	Vegetation	Stones
18639105	4E-F4-V	2.10 - 2.10	Dark Brown	Clay	Vegetation	Stones
18639188	4E-F6-V	1.55 - 1.55	Dark Brown	Sandy Clay	Vegetation	Stones
18639109	4E-G4	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
18639115	4E-G4	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18639121	4E-G4-V	1.90 - 1.90	Dark Brown	Loamy Sand	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C4	4E-C4	4E-C4-V	4E-D4	4E-D4	4E-D4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.25 - 2.25	0.50 - 0.50	1.20 - 1.20	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639087	18639150	18639228	18639237	18639243	18639248
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5.2	6.8	26	20	13	23
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	194 M	<12 M	<12 M	164 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0107 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.196			0.225		
Sulphate, Total potential	<0.06 %	TM132		0.588			0.675		
Soil Organic Matter (SOM)	<0.35 %	TM132		7.28 #	2.64 #	1.48 #	29 #	8.4 #	1.15 #
pH	1 pH Units	TM133		11.2 M	12.6 M	6.54 M	8.35 M	11.8 M	8.06 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.76 M	12.8 M	16.1 M	10.4 M	8.56 M	15.2 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		150 M	388 M	46.6 M	16.2 M	480 M	36.4 M
Copper	<1.4 mg/kg	TM181		<14 M	286 M	14.2 M	14.7 M	23.9 M	10.6 M
Iron	<1000 mg/kg	TM181		160000 #	223000 #	49700 #	51700 #	151000 #	41500 #
Lead	<0.7 mg/kg	TM181		38.2 M	31.2 M	29.3 M	23.5 M	19.6 M	27.8 M
Manganese	<0.13 mg/kg	TM181		11200 M	28300 M	1260 M	3220 M	35900 M	866 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		17.1 M	36.3 M	43.7 M	18.4 M	14.4 M	43 M
Selenium	<1 mg/kg	TM181		<10 #	16.4 #	<1 #	1.72 #	13.1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		179 #	405 #	71.4 #	52.3 #	443 #	61.6 #
Zinc	<1.9 mg/kg	TM181		164 M	122 M	129 M	109 M	92.3 M	117 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.28			0.202		
Calcium	<21 mg/kg	TM224		138000			98100		
Magnesium	<8 mg/kg	TM224		9150			6120		
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0774 M			0.336 M		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E4	4E-E4	4E-E4	4E-E5	4E-E5	4E-E6
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.80 - 0.80	0.25 - 0.25
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639252	18639257	18639262	18639127	18639132	18639144
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.6	14	12	12	10	7.9
Gross Calorific Value in Dry Matter Q(V/gr/d)	<0.5 MJ/kg	SUB			11.2				
Gross Calorific Value Original Q(V/gr/ar)	<0.5 MJ/kg	SUB			9.84				
Net Calorific Value in Dry Matter Q(V/net/d)	<0.5 MJ/kg	SUB			11				
Net Calorific Value in Original Q(V/net/ar)	<0.5 MJ/kg	SUB			9.34				
Water Analytical M (ad)	<0.5 %	SUB			0.95				
Water Gross M(ex)	<0.5 %	SUB			11.6				
Water Total M(ar)	<0.5 %	SUB			12.5				
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.285		0.29	0.304		0.631
Sulphate, Total potential	<0.06 %	TM132		0.855		0.87	0.912		1.89
Soil Organic Matter (SOM)	<0.35 %	TM132		32.2 #	45.2 #	31.7 #	7.36 #	27.8 #	1.52 #
pH	1 pH Units	TM133		8.94 M	8.86 M	10.9 M	12.1 M	12.2 M	11.8 M
Cyanide, Total	<1 mg/kg	TM153		20.9 M	18.5 M	12.7 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		2.02 M	1.52 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.5 M	12.1 M	11.2 M	<6 M	<6 M	10.3 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		34 M	37.7 M	69.8 M	454 M	369 M	220 M
Copper	<1.4 mg/kg	TM181		17.9 M	26.2 M	21.1 M	19 M	<14 M	26.7 M
Iron	<1000 mg/kg	TM181		43800 #	41500 #	43600 #	130000 #	92900 #	125000 #
Lead	<0.7 mg/kg	TM181		33 M	24.7 M	58.6 M	16.6 M	21.8 M	20 M
Manganese	<0.13 mg/kg	TM181		3750 M	4240 M	5570 M	28800 M	22300 M	18000 M
Mercury	<0.14 mg/kg	TM181		1.61 M	2.17 M	0.757 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		13.3 M	15.5 M	18 M	13.5 M	6.83 M	22.5 M
Selenium	<1 mg/kg	TM181		2.36 #	2.91 #	3.3 #	19.3 #	12 #	13.3 #
Vanadium	<0.2 mg/kg	TM181		59.2 #	92.1 #	84.3 #	508 #	335 #	249 #
Zinc	<1.9 mg/kg	TM181		97.9 M	103 M	156 M	43.3 M	45.1 M	56.1 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.21		0.261	0.729		0.796
Calcium	<21 mg/kg	TM224		74600		133000	224000		193000

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E4	4E-E4	4E-E4	4E-E5	4E-E5	4E-E6
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.80 - 0.80	0.25 - 0.25
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639252	18639257	18639262	18639127	18639132	18639144
			AGS Reference						
Magnesium	<8 mg/kg	TM224		7220		13500	12600		14000
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.111 M		0.187 M	0.244 M		0.174 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							0.0174 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							0.0017 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							N/A
Asbestos Quantification - Total - %	<0.001 %	TM304							0.0191 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E6	4E-E7	4E-E7	4E-E4-V	4E-E5-V	4E-E6-V
			Depth (m)	0.80 - 0.80	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10	1.95 - 1.95	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639155	18639201	18639205	18639218	18639137	18639169
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	6.1	3.8	23	32	24
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	205 M	190 M	102 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0444 M	<0.01 M	0.0104 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0111 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0555 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.153				
Sulphate, Total potential	<0.06 %	TM132			0.459				
Soil Organic Matter (SOM)	<0.35 %	TM132		1.14 #	2.1 #	1.19 #	1.05 #	5.78 #	1.23 #
pH	1 pH Units	TM133		12.2 M	9.95 M	12.6 M	8.12 M	6.64 M	7.63 M
Cyanide, Total	<1 mg/kg	TM153		3.56 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		8.95 M	13.4 M	5.77 M	12.4 M	13.1 M	13.6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.2 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		297 M	60.5 M	466 M	31.7 M	37.7 M	33.7 M
Copper	<1.4 mg/kg	TM181		24.8 M	17.1 M	12.5 M	10.3 M	16.3 M	11.8 M
Iron	<1000 mg/kg	TM181		185000 #	114000 #	188000 #	40000 #	34400 #	41300 #
Lead	<0.7 mg/kg	TM181		2.92 M	74.8 M	<0.7 M	22.7 M	45.1 M	24.5 M
Manganese	<0.13 mg/kg	TM181		32400 M	4850 M	49400 M	1390 M	267 M	736 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		14.2 M	21.1 M	5.87 M	34 M	27.7 M	38.8 M
Selenium	<1 mg/kg	TM181		10.2 #	<10 #	13.9 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		360 #	95 #	439 #	53.6 #	57.8 #	56.5 #
Zinc	<1.9 mg/kg	TM181		53.8 M	239 M	14.6 M	103 M	129 M	107 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.303				
Calcium	<21 mg/kg	TM224			153000				
Magnesium	<8 mg/kg	TM224			9950				
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0991 M				
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			N/A				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E7-V	4E-F4	4E-F4	4E-F6	4E-F6	4E-F4-V
			Depth (m)	1.75 - 1.75	0.50 - 0.50	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639212	18639092	18639099	18639174	18639180	18639105
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		32	7.2	8.5	8.8	8.8	22
Exchangeable Ammonia as N	<12 mg/kg	TM024		378 M	<12 M	<12 M	<12 M	<12 M	89.8 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.221		0.505	
Sulphate, Total potential	<0.06 %	TM132				0.663		1.52	
Soil Organic Matter (SOM)	<0.35 %	TM132		5.65 #	28.1 #	30.5 #	1.25 #	0.972 #	1.33 #
pH	1 pH Units	TM133		7.18 M	10.1 M	9.64 M	12.7 M	12.1 M	7.97 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	1.06 M	1.84 M	<1 M	1.02 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		14 M	11.7 M	9.29 M	4.75 M	<6 M	12.3 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		35.9 M	108 M	59 M	352 M	439 M	29.8 M
Copper	<1.4 mg/kg	TM181		22.5 M	18.5 M	18.7 M	12.4 M	<14 M	11.1 M
Iron	<1000 mg/kg	TM181		39900 #	36200 #	37500 #	129000 #	112000 #	37400 #
Lead	<0.7 mg/kg	TM181		39.1 M	45.6 M	33.2 M	0.992 M	10.5 M	24.5 M
Manganese	<0.13 mg/kg	TM181		349 M	5510 M	5380 M	29500 M	32200 M	1220 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		30.4 M	12.9 M	11.6 M	6.38 M	8.31 M	32.6 M
Selenium	<1 mg/kg	TM181		<1 #	3.27 #	3.11 #	10.8 #	21.1 #	<1 #
Vanadium	<0.2 mg/kg	TM181		58 #	112 #	128 #	283 #	379 #	52.7 #
Zinc	<1.9 mg/kg	TM181		165 M	116 M	96.3 M	30.9 M	30.2 M	102 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.133		0.539	
Calcium	<21 mg/kg	TM224				192000		253000	
Magnesium	<8 mg/kg	TM224				35200		8910	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.0796 M		0.127 M	

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-F6-V	4E-G4	4E-G4	4E-G4-V		
			Depth (m)	1.55 - 1.55	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018		
			SDG Ref	181031-51	181031-51	181031-51	181031-51		
			Lab Sample No.(s)	18639188	18639109	18639115	18639121		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		31	6	5.9	22		
Exchangeable Ammonia as N	<12 mg/kg	TM024		216 M	<12 M	<12 M	68 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M		
Sulphur, Total	<0.02 %	TM132				0.247			
Sulphate, Total potential	<0.06 %	TM132				0.741			
Soil Organic Matter (SOM)	<0.35 %	TM132		3.78 #	22.8 #	28.3 #	0.953 #		
pH	1 pH Units	TM133		6.87 M	10.1 M	9.46 M	8.63 M		
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	1.98 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		11.9 M	10.8 M	10.9 M	14.2 M		
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.129 M	<0.02 M	<0.02 M		
Chromium	<0.9 mg/kg	TM181		41.4 M	38.9 M	36.2 M	30.3 M		
Copper	<1.4 mg/kg	TM181		13.7 M	31.2 M	107 M	12.2 M		
Iron	<1000 mg/kg	TM181		39800 #	38700 #	52300 #	38300 #		
Lead	<0.7 mg/kg	TM181		32 M	72.6 M	112 M	23.8 M		
Manganese	<0.13 mg/kg	TM181		639 M	3590 M	2860 M	1710 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		30.3 M	28.1 M	33 M	35.1 M		
Selenium	<1 mg/kg	TM181		<1 #	2.25 #	1.6 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		65.9 #	87.9 #	64.4 #	52.9 #		
Zinc	<1.9 mg/kg	TM181		114 M	151 M	864 M	104 M		
Sulphate, acid soluble (total)	<0.02 %	TM221				0.231			
Calcium	<21 mg/kg	TM224				114000			
Magnesium	<8 mg/kg	TM224				9950			
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.141 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C4	4E-C4	4E-C4-V	4E-D4	4E-D4	4E-D4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.25 - 2.25	0.50 - 0.50	1.20 - 1.20	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639087	18639150	18639228	18639237	18639243	18639248
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.7	85.3	93.1	86.3	94.2	92.1
Acenaphthene-d10 % recovery**	%	TM218		81.4	77.6	98.5	86.7	99.8	94.7
Phenanthrene-d10 % recovery**	%	TM218		78	81.9	97	85.8	97.6	92.7
Chrysene-d12 % recovery**	%	TM218		75.7	76.5	84	74.7	83.6	80.8
Perylene-d12 % recovery**	%	TM218		77	79.6	81	70.2	79.3	76.8
Naphthalene	<0.009 mg/kg	TM218		0.922 M	0.471 M	0.0156 M	0.136 M	0.102 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		0.234 M	0.112 M	<0.012 M	0.0516 M	0.0778 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.04 M	0.0609 M	<0.008 M	0.0285 M	0.0739 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0945 M	0.0881 M	<0.01 M	0.075 M	0.0665 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		1.74 M	2.34 M	0.0452 M	0.549 M	0.904 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.404 M	0.503 M	<0.016 M	0.158 M	0.232 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		3.08 M	6.33 M	0.0694 M	0.738 M	2.53 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		2.43 M	4.32 M	0.0569 M	0.594 M	2.36 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.62 M	3.05 M	0.0336 M	0.456 M	1.65 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		1.55 M	3.27 M	0.0416 M	0.463 M	1.95 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.62 M	4.82 M	0.0623 M	0.658 M	3.17 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.808 M	1.69 M	0.03 M	0.181 M	1.15 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.62 M	3.06 M	0.0387 M	0.397 M	2.15 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.01 M	1.88 M	0.0323 M	0.242 M	1.75 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.311 M	0.598 M	<0.023 M	0.0958 M	0.401 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.19 M	2.04 M	0.0355 M	0.315 M	1.69 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		19.6	34.6	0.461	5.14	20.3	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E4	4E-E4	4E-E4	4E-E5	4E-E5	4E-E6
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.80 - 0.80	0.25 - 0.25
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639252	18639257	18639262	18639127	18639132	18639144
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.3	85	93.6	86.6	94.9	89.1
Acenaphthene-d10 % recovery**	%	TM218		82.8	81.7	99.3	80.9	94.4	81.1
Phenanthrene-d10 % recovery**	%	TM218		78.1	77.5	95.4	82	98.8	82.2
Chrysene-d12 % recovery**	%	TM218		72.8	73.1	77.6	78	91.4	76
Perylene-d12 % recovery**	%	TM218		71.3	70.7	75.6	80.5	77.9	79.3
Naphthalene	<0.009 mg/kg	TM218		2.46 M	2.24 M	1.55 M	0.0596 M	0.102 M	<0.045 M
Acenaphthylene	<0.012 mg/kg	TM218		0.8 M	1.39 M	0.571 M	<0.012 M	<0.012 M	0.155 M
Acenaphthene	<0.008 mg/kg	TM218		0.221 M	0.396 M	0.192 M	0.047 M	0.0583 M	<0.04 M
Fluorene	<0.01 mg/kg	TM218		0.488 M	1.11 M	0.464 M	0.0266 M	0.0265 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		5.81 M	10.3 M	5.03 M	0.513 M	0.803 M	0.361 M
Anthracene	<0.016 mg/kg	TM218		1.45 M	2.83 M	1.36 M	0.112 M	0.145 M	<0.08 M
Fluoranthene	<0.017 mg/kg	TM218		10.7 M	16.6 M	7.72 M	1.21 M	1.35 M	1.22 M
Pyrene	<0.015 mg/kg	TM218		8.71 M	13.1 M	6.06 M	1.1 M	1.23 M	1.35 M
Benz(a)anthracene	<0.014 mg/kg	TM218		6.21 M	8.9 M	4.25 M	0.787 M	0.853 M	1.25 M
Chrysene	<0.01 mg/kg	TM218		6.2 M	7.02 M	4.12 M	0.799 M	0.828 M	1.56 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		9.9 M	12.9 M	6.61 M	1.29 M	1.06 M	2.73 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		3.52 M	3.69 M	2.16 M	0.458 M	0.462 M	1.09 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		6.78 M	8.46 M	4.06 M	0.918 M	0.887 M	1.96 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		4.16 M	4.8 M	3.58 M	0.504 M	0.546 M	1.2 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		1.34 M	1.49 M	1.02 M	0.172 M	0.146 M	0.376 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		4.93 M	5.81 M	3.45 M	0.635 M	0.608 M	1.48 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		73.6	101	52.2	8.63	9.11	14.7

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E6	4E-E7	4E-E7	4E-E4-V	4E-E5-V	4E-E6-V
			Depth (m)	0.80 - 0.80	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10	1.95 - 1.95	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639155	18639201	18639205	18639218	18639137	18639169
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		87.8	82.4	76.6	94	79.7	81.4
Acenaphthene-d10 % recovery**	%	TM218		84.6	84.6	81.4	98.3	82.8	84.3
Phenanthrene-d10 % recovery**	%	TM218		87.1	87.1	81.7	97.4	85.8	86.1
Chrysene-d12 % recovery**	%	TM218		84.6	76.8	81.2	82.3	79.5	84.9
Perylene-d12 % recovery**	%	TM218		80.3	70.7	77.1	77.7	76.4	82.6
Naphthalene	<0.009 mg/kg	TM218		0.0454 M	0.293 M	2 M	0.0272 M	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.116 M	<0.06 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0292 M	0.0186 M	0.255 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0597 M	0.107 M	0.0344 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.185 M	0.659 M	2.93 M	0.0718 M	<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.0302 M	0.188 M	0.484 M	0.0258 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.745 M	1.02 M	7.16 M	0.024 M	<0.017 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.777 M	0.727 M	6.84 M	0.0201 M	<0.015 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.712 M	0.551 M	5.4 M	<0.014 M	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.831 M	0.512 M	6.03 M	<0.01 M	<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.46 M	0.511 M	8.32 M	<0.015 M	<0.015 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.496 M	0.234 M	3.3 M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.02 M	0.464 M	6.2 M	<0.015 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.554 M	0.333 M	5.77 M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.181 M	0.0828 M	0.822 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.71 M	0.365 M	4.05 M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		7.77	6.13	59.7	0.203	<0.118	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E7-V	4E-F4	4E-F4	4E-F6	4E-F6	4E-F4-V
			Depth (m)	1.75 - 1.75	0.50 - 0.50	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639212	18639092	18639099	18639174	18639180	18639105
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.5	87.7	91	82.2	90.4	84.9
Acenaphthene-d10 % recovery**	%	TM218		83.2	89.5	86.3	85.1	81.3	81.4
Phenanthrene-d10 % recovery**	%	TM218		85.6	85.9	81	86	81.4	75.8
Chrysene-d12 % recovery**	%	TM218		77.4	74.5	72.3	77.2	70.8	71.6
Perylene-d12 % recovery**	%	TM218		74.3	72.8	72.4	73.5	72.3	70.7
Naphthalene	<0.009 mg/kg	TM218		0.545 M	0.382 M	0.429 M	0.0503 M	<0.045 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.148 M	0.124 M	<0.012 M	<0.06 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0282 M	0.028 M	0.132 M	<0.008 M	<0.04 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0688 M	0.122 M	<0.01 M	<0.05 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.024 M	0.698 M	1.55 M	0.22 M	0.176 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.177 M	0.461 M	0.0206 M	<0.08 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.0335 M	1.27 M	3.12 M	0.624 M	0.648 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.0253 M	0.999 M	2.6 M	0.546 M	0.711 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	0.737 M	1.94 M	0.249 M	0.519 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0162 M	0.716 M	1.88 M	0.287 M	0.565 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	1.31 M	2.96 M	0.34 M	1.17 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.457 M	1.03 M	0.15 M	0.394 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	0.788 M	2.21 M	0.255 M	0.745 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.531 M	1.48 M	0.183 M	0.497 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.189 M	0.427 M	0.0451 M	0.148 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.679 M	1.63 M	0.206 M	0.604 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.672	9.17	22.1	3.18	6.17	<0.118

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-F6-V	4E-G4	4E-G4	4E-G4-V		
			Depth (m)	1.55 - 1.55	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018		
			SDG Ref	181031-51	181031-51	181031-51	181031-51		
			Lab Sample No.(s)	18639188	18639109	18639115	18639121		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		83.1	87.2	86.9	81.9		
Acenaphthene-d10 % recovery**	%	TM218		80.1	77.2	88.3	79.9		
Phenanthrene-d10 % recovery**	%	TM218		73.7	83.3	78.7	76		
Chrysene-d12 % recovery**	%	TM218		70.2	74	74.4	73.3		
Perylene-d12 % recovery**	%	TM218		72.8	71.8	72.9	72.6		
Naphthalene	<0.009 mg/kg	TM218		0.0978 M	0.561 M	0.621 M	<0.009 M		
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.236 M	0.446 M	<0.012 M		
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0494 M	0.088 M	<0.008 M		
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.123 M	0.365 M	<0.01 M		
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	1.54 M	2.81 M	<0.015 M		
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.475 M	0.779 M	<0.016 M		
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	3.33 M	5.18 M	<0.017 M		
Pyrene	<0.015 mg/kg	TM218		<0.015 M	2.64 M	3.98 M	<0.015 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	2.17 M	2.96 M	<0.014 M		
Chrysene	<0.01 mg/kg	TM218		<0.01 M	2.02 M	2.96 M	<0.01 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	3.58 M	5.19 M	<0.015 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	1.59 M	1.67 M	<0.014 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	2.29 M	3.48 M	<0.015 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	1.55 M	2.79 M	<0.018 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.488 M	0.824 M	<0.023 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	2 M	3.61 M	<0.024 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	24.6	37.8	<0.118		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C4	4E-C4	4E-C4-V	4E-D4	4E-D4	4E-D4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.25 - 2.25	0.50 - 0.50	1.20 - 1.20	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639087	18639150	18639228	18639237	18639243	18639248
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		95	100	110	72.4	93	91
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M	<0.1 M	<0.2 M	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.7	4.04	<0.1	1.61	8.13	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		35.9	21.7	1.14	19	29.4	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		64.9	83.4	1.79	80.5	65.9	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		16.2	27.7	<0.1	14.8	7.3	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		121	137	2.93	116	111	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.98	0.856	0.23	5.57	2.76	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		29.3	13.3	1.42	22.6	18.4	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		91.2	79.2	6.09	107	96.4	<0.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		33.6	33.6	3.1	31.6	35.7	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		13	12.6	1.28	11.1	12.9	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		157	127	10.8	166	153	<0.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		278	264	13.8	282	264	<0.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E4	4E-E4	4E-E4	4E-E5	4E-E5	4E-E6
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.80 - 0.80	0.25 - 0.25
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639252	18639257	18639262	18639127	18639132	18639144
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		41	45.2	57.3	96.5	98	101
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 #	<0.2 #	<0.2 #	0.579 M	0.322 M	1.77 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0463	0.0155	0.0391
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0328	0.0155	0.0467
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.276	0.164	0.981
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.28	3.06	4.72	5.34	1.38	23.5
Aliphatics >C16-C21	<0.1 mg/kg	TM173		20.9	21.4	21.6	28.6	11.1	109
Aliphatics >C21-C35	<0.1 mg/kg	TM173		51.3	33.7	43	61.1	35.4	119
Aliphatics >C35-C44	<0.1 mg/kg	TM173		7.89	4.55	8.94	18.7	8.93	52.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		85.5	62.7	78.3	114	56.9	304
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0215	<0.01	0.0315
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.184	0.11	0.654
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		10.4	6.3	7.22	2.3	2.16	5.66
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		86.9	39.7	55	16.2	17.1	45.8
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		358	149	189	80.3	73.3	136
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		84.7	36.3	53.5	30.4	25.3	86.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		24.8	12.5	18.2	12.1	9.41	39.9
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		540	232	305	129	118	275
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		626	294	383	244	175	580

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E6	4E-E7	4E-E7	4E-E4-V	4E-E5-V	4E-E6-V
			Depth (m)	0.80 - 0.80	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10	1.95 - 1.95	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639155	18639201	18639205	18639218	18639137	18639169
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		109	70	94.2	106	104	73.6
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.111 M	<0.2 M	2.86 M	1.31 M	<0.1 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0111	<0.02	0.0561	0.0715	<0.01	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.02	0.619	0.195	<0.01	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0477	<0.02	0.74	0.542	<0.01	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.25	0.683	8.03	70.9	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		7.31	3.8	13	67.6	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		28.8	41.6	73.8	14.1	5.27	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		16	16.3	20.4	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		53.4	62.4	115	153	5.27	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.02	0.156	<0.02	<0.01	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.02	0.373	<0.02	<0.01	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.02	0.412	0.13	<0.01	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0311	<0.02	0.494	0.361	<0.01	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.7	1.97	3.21	21.8	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		8.59	8.5	34.8	26.2	0.268	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		68.6	45.3	216	9.14	25.1	<0.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		50.5	28.7	76.5	1.62	3.81	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		22.9	12.3	27.6	1.2	0.831	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		129	84.5	330	58.8	29.2	<0.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		183	147	448	213	34.4	<0.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E7-V	4E-F4	4E-F4	4E-F6	4E-F6	4E-F4-V
			Depth (m)	1.75 - 1.75	0.50 - 0.50	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639212	18639092	18639099	18639174	18639180	18639105
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		100	88	103	110	94.4	111
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		4.2 M	<0.1 M	<0.1 M	<0.2 M	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0311	<0.01	<0.01	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.124	<0.01	<0.01	<0.02	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.891	<0.01	<0.01	<0.02	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		1.53	<0.01	<0.01	<0.02	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	1.15	1.09	0.718	14.5	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	12.2	12.2	5.58	75.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		5.15	27.1	31.4	18.2	63.1	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	5.28	3.78	8.55	36.3	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		5.15	45.7	48.4	33	189	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.01	<0.01	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.01	<0.01	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.593	<0.01	<0.01	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		1.02	<0.01	<0.01	<0.02	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	1.69	3.5	0.197	3.18	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	12	29.6	4.06	25.8	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		50.5	48.4	118	24.4	85.4	0.282
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		7.63	15.9	32.8	14.5	51.3	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		1.88	5.74	10.6	5.98	22.6	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		58.2	77.9	184	43.1	166	0.282
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		67.5	124	232	76.1	355	0.282

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-F6-V	4E-G4	4E-G4	4E-G4-V		
			Depth (m)	1.55 - 1.55	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018		
			SDG Ref	181031-51	181031-51	181031-51	181031-51		
			Lab Sample No.(s)	18639188	18639109	18639115	18639121		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		77	91.1	73.2	94.6		
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.2 M	<0.2 M	<0.2 M		
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	0.233	1.25	<0.1		
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	9.83	10.3	<0.1		
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1.71	46.5	64.8	<0.1		
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	17.4	29.7	<0.1		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		1.71	73.9	106	<0.1		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.02	<0.02	<0.02		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	3.58	1.6	<0.1		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	56.6	16.3	<0.1		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		11.3	174	93.1	1.53		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.67	64.5	43.7	2.26		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		0.523	23.8	17.3	2.05		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		13	299	155	3.78		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		14.7	373	261	3.78		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C4	4E-C4	4E-C4-V	4E-D4	4E-D4	4E-D4-V
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.25 - 2.25	0.50 - 0.50	1.20 - 1.20	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639087	18639150	18639228	18639237	18639243	18639248
			AGS Reference						
Dibromofluoromethane**	%	TM116		120	118	117	103	117	122
Toluene-d8**	%	TM116		96.4	97.1	99.9	97.1	98.1	99.1
4-Bromofluorobenzene**	%	TM116		97.7	98	104	83.9	94.6	106
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E4	4E-E4	4E-E4	4E-E5	4E-E5	4E-E6
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.80 - 0.80	0.25 - 0.25
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639252	18639257	18639262	18639127	18639132	18639144
			AGS Reference						
Dibromofluoromethane**	%	TM116		85.9	103	95.8	104	118	122
Toluene-d8**	%	TM116		89.7	90.8	95.3	99.8	98.1	95.7
4-Bromofluorobenzene**	%	TM116		69.3	66.6	78.2	95.5	94.3	100
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.159 M	0.367 M	0.183 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E6	4E-E7	4E-E7	4E-E4-V	4E-E5-V	4E-E6-V
			Depth (m)	0.80 - 0.80	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10	1.95 - 1.95	1.80 - 1.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639155	18639201	18639205	18639218	18639137	18639169
			AGS Reference						
Dibromofluoromethane**	%	TM116		118	100	123	126	119	128
Toluene-d8**	%	TM116		99	97.4	106	108	100	107
4-Bromofluorobenzene**	%	TM116		107	85.2	106	108	104	106
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	0.102 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E7-V	4E-F4	4E-F4	4E-F6	4E-F6	4E-F4-V
			Depth (m)	1.75 - 1.75	0.50 - 0.50	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018	30/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			SDG Ref	181031-51	181031-51	181031-51	181031-51	181031-51	181031-51
			Lab Sample No.(s)	18639212	18639092	18639099	18639174	18639180	18639105
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	115	114	106	105	122
Toluene-d8**	%	TM116		97.5	95.7	95.9	101	99.2	99.3
4-Bromofluorobenzene**	%	TM116		94.6	87.2	84.9	97.3	96	103
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.436 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			4E-F6-V	1.55 - 1.55	Soil/Solid (S)	30/10/2018	00:00	31/10/2018	181031-51	18639188	
			4E-G4	0.50 - 0.50	Soil/Solid (S)	30/10/2018	00:00	31/10/2018	181031-51	18639109	
			4E-G4	1.00 - 1.00	Soil/Solid (S)	30/10/2018	00:00	31/10/2018	181031-51	18639115	
			4E-G4-V	1.90 - 1.90	Soil/Solid (S)	30/10/2018	00:00	31/10/2018	181031-51	18639121	
Dibromofluoromethane**	%	TM116	121	102	101	120					
Toluene-d8**	%	TM116	97.2	98.2	96.9	105					
4-Bromofluorobenzene**	%	TM116	99.8	88.9	83.8	107					
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116	<0.1 M	<0.1 M	<0.1 M	<0.1 M					
Benzene	<0.009 mg/kg	TM116	<0.09 M	<0.09 M	<0.09 M	<0.09 M					
Toluene	<0.007 mg/kg	TM116	<0.07 M	<0.07 M	<0.07 M	<0.07 M					
Ethylbenzene	<0.004 mg/kg	TM116	<0.04 M	<0.04 M	<0.04 M	<0.04 M					
p/m-Xylene	<0.01 mg/kg	TM116	<0.1 #	<0.1 #	<0.1 #	<0.1 #					
o-Xylene	<0.01 mg/kg	TM116	<0.1 M	<0.1 M	<0.1 M	<0.1 M					
Naphthalene	<0.013 mg/kg	TM116	<0.13 M	<0.13 M	<0.13 M	<0.13 M					
Sum of BTEX	<0.04 mg/kg	TM116	<0.4	<0.4	<0.4	<0.4					

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C4 0.50 - 0.50 SOLID 30/10/2018 00:00:00 01/11/2018 12:45:39 181031-51 18639087 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D4 0.50 - 0.50 SOLID 30/10/2018 00:00:00 31/10/2018 15:41:36 181031-51 18639237 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E4 0.50 - 0.50 SOLID 30/10/2018 00:00:00 31/10/2018 20:36:09 181031-51 18639252 TM048	09/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E4 1.50 - 1.50 SOLID 30/10/2018 00:00:00 31/10/2018 20:37:46 181031-51 18639262 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E5 0.20 - 0.20 SOLID 30/10/2018 00:00:00 31/10/2018 15:01:45 181031-51 18639127 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E6 0.25 - 0.25 SOLID 30/10/2018 00:00:00 31/10/2018 20:55:32 181031-51 18639144 TM048	09/11/2018	Lucy Caroe	Soil containing debris typical of AIB	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 181031-51 **Client Reference:** **Report Number:** 481247
Location: Llanwern **Order Number:** LLA502 **Superseded Report:** 480708

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E7 0.30 - 0.30 SOLID 30/10/2018 00:00:00 31/10/2018 16:18:53 181031-51 18639201 TM048	09/11/2018	Lucy Caroe	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-F4 1.00 - 1.00 SOLID 30/10/2018 00:00:00 31/10/2018 20:53:41 181031-51 18639099 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-F6 0.80 - 0.80 SOLID 30/10/2018 00:00:00 31/10/2018 17:46:34 181031-51 18639180 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-G4 1.00 - 1.00 SOLID 30/10/2018 00:00:00 31/10/2018 14:58:03 181031-51 18639115 TM048	09/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E6 0.25 - 0.25 SOLID 30/10/2018 00:00:00 31/10/2018 20:57:06 181031-51 18639144 TM304	None (#)	N/A	0.0174 (#)	0.0017 (#)	0.0191 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E7 0.30 - 0.30 SOLID 30/10/2018 00:00:00 31/10/2018 16:20:58 181031-51 18639201 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.49
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.8
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639087
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-C4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000185	<0.00001	0.000185	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000878	<0.0005	0.00878	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00381	<0.001	0.0381	<0.01	-	-	-
Copper	0.00459	<0.0003	0.0459	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00102	<0.0004	0.0102	<0.004	-	-	-
Selenium	0.00182	<0.001	0.0182	<0.01	-	-	-
Vanadium	0.0634	<0.001	0.634	<0.01	-	-	-
Zinc	0.00147	<0.001	0.0147	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000283	<0.0001	0.00283	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	411.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.49
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.8
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639087
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-C4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	411.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639092
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000107	<0.00001	0.000107	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00942	<0.0005	0.0942	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00295	<0.001	0.0295	<0.01	-	-	-
Copper	0.000876	<0.0003	0.00876	<0.003	-	-	-
Lead	0.00098	<0.0002	0.0098	<0.002	-	-	-
Manganese	0.00358	<0.003	0.0358	<0.03	-	-	-
Nickel	0.000444	<0.0004	0.00444	<0.004	-	-	-
Selenium	0.00249	<0.001	0.0249	<0.01	-	-	-
Vanadium	0.0435	<0.001	0.435	<0.01	-	-	-
Zinc	0.00117	<0.001	0.0117	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.667	<0.019	6.67	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	9.91
Conductivity (µS/cm)	103.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639092
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	9.91
Conductivity (µS/cm)	103.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639099
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00351	<0.0005	0.0351	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00459	<0.001	0.0459	<0.01	-	-	-
Copper	0.00258	<0.0003	0.0258	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00338	<0.001	0.0338	<0.01	-	-	-
Vanadium	0.0542	<0.001	0.542	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.242	<0.019	2.42	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00017	<0.00005	0.0017	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000145	<0.00005	0.00145	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.0000741	<0.00002	0.000741	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000134	<0.00005	0.00134	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000885	<0.00005	0.000885	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000113	<0.00005	0.00113	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.62
Conductivity (µS/cm)	222.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639099
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.62
Conductivity (µS/cm)	222.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639109
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-G4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00429	<0.0005	0.0429	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00634	<0.001	0.0634	<0.01	-	-	-
Copper	0.00363	<0.0003	0.0363	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0027	<0.001	0.027	<0.01	-	-	-
Vanadium	0.0424	<0.001	0.424	<0.01	-	-	-
Zinc	0.00247	<0.001	0.0247	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.194	<0.019	1.94	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000274	<0.00005	0.00274	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000208	<0.00005	0.00208	<0.0005	-	-	-
Pyrene by GCMS	0.000219	<0.00005	0.00219	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000177	<0.00005	0.00177	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000403	<0.00005	0.00403	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000252	<0.00005	0.00252	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000176	<0.00002	0.00176	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000194	<0.00005	0.00194	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000259	<0.00005	0.00259	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000198	<0.00005	0.00198	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00236	<0.00082	0.0236	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.60
Conductivity (µS/cm)	299.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639109
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-G4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.60
Conductivity (µS/cm)	299.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639115
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-G4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000115	<0.00001	0.000115	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00356	<0.0005	0.0356	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0076	<0.001	0.076	<0.01	-	-	-
Copper	0.00974	<0.0003	0.0974	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000888	<0.0004	0.00888	<0.004	-	-	-
Selenium	0.00246	<0.001	0.0246	<0.01	-	-	-
Vanadium	0.0475	<0.001	0.475	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.266	<0.019	2.66	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.93
Conductivity (µS/cm)	293.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.27
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.1
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639115
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-G4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.93
Conductivity (µS/cm)	293.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639127
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E5
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.000013	<0.00001	0.00013	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000722	<0.0005	0.00722	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00342	<0.001	0.0342	<0.01	-	-	-
Copper	0.00354	<0.0003	0.0354	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000936	<0.0004	0.00936	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0169	<0.001	0.169	<0.01	-	-	-
Zinc	0.00125	<0.001	0.0125	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.71
Conductivity (µS/cm)	962.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639127
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E5
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.71
Conductivity (µS/cm)	962.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639132
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00739	<0.001	0.0739	<0.01	-	-	-
Copper	0.00303	<0.0003	0.0303	<0.003	-	-	-
Lead	0.000444	<0.0002	0.00444	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000862	<0.0004	0.00862	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00278	<0.001	0.0278	<0.01	-	-	-
Zinc	0.00348	<0.001	0.0348	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000104	<0.00005	0.00104	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.0000981	<0.00005	0.000981	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.0000935	<0.00005	0.000935	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	1,650.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639132
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E5
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.88
Conductivity (µS/cm)	1,650.00
Temperature (°C)	19.10
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case								
SDG	181031-51							
Lab Sample Number(s)	18639144							
Sampled Date	30-Oct-2018							
Customer Sample Ref.	4E-E6							
Depth (m)	0.25 - 0.25							

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000565	<0.00001	0.000565	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000645	<0.0005	0.00645	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0114	<0.001	0.114	<0.01	-	-	-
Copper	0.00332	<0.0003	0.0332	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00139	<0.001	0.0139	<0.01	-	-	-
Vanadium	0.0138	<0.001	0.138	<0.01	-	-	-
Zinc	0.00207	<0.001	0.0207	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.42
Conductivity (µS/cm)	942.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.58
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.1
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639144
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E6
Depth (m)	0.25 - 0.25

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.42
Conductivity (µS/cm)	942.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639150
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-C4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0267	<0.001	0.267	<0.01	-	-	-
Copper	0.00438	<0.0003	0.0438	<0.003	-	-	-
Lead	0.00206	<0.0002	0.0206	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000599	<0.0004	0.00599	<0.004	-	-	-
Selenium	0.00173	<0.001	0.0173	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00419	<0.001	0.0419	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00068	<0.0001	0.0068	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0022	<0.00005	0.022	<0.0005	-	-	-
Anthracene by GCMS	0.000643	<0.00005	0.00643	<0.0005	-	-	-
Phenanthrene by GCMS	0.00472	<0.00005	0.0472	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000167	<0.00005	0.00167	<0.0005	-	-	-
Pyrene by GCMS	0.00132	<0.00005	0.0132	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000178	<0.00005	0.00178	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0099	<0.00082	0.099	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.34
Conductivity (µS/cm)	3,760.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639150
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-C4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.34
Conductivity (µS/cm)	3,760.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639155
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E6
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000101	<0.00001	0.000101	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0012	<0.0005	0.012	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0059	<0.001	0.059	<0.01	-	-	-
Copper	0.000404	<0.0003	0.00404	<0.003	-	-	-
Lead	0.000307	<0.0002	0.00307	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00175	<0.001	0.0175	<0.01	-	-	-
Zinc	0.00388	<0.001	0.0388	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	0.0000515	<0.00005	0.000515	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000108	<0.00005	0.00108	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000135	<0.00005	0.00135	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.0000924	<0.00005	0.000924	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.71
Conductivity (µS/cm)	1,990.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639155
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E6
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.71
Conductivity (µS/cm)	1,990.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639174
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F6
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00258	<0.0005	0.0258	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00653	<0.001	0.0653	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000634	<0.0002	0.00634	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00132	<0.001	0.0132	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0012	<0.001	0.012	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000238	<0.0001	0.00238	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000509	<0.00005	0.00509	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000271	<0.00005	0.00271	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.0001	<0.00005	0.001	<0.0005	-	-	-
Pyrene by GCMS	0.000548	<0.00005	0.00548	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000115	<0.00005	0.00115	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000129	<0.00005	0.00129	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000137	<0.00005	0.00137	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000966	<0.00005	0.000966	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00214	<0.00082	0.0214	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	12.11
Conductivity (µS/cm)	5,520.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639174
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F6
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	12.11
Conductivity (µS/cm)	5,520.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639180
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F6
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00235	<0.0005	0.0235	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00376	<0.001	0.0376	<0.01	-	-	-
Copper	0.000997	<0.0003	0.00997	<0.003	-	-	-
Lead	0.002	<0.0002	0.02	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00605	<0.001	0.0605	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000196	<0.0001	0.00196	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000573	<0.00005	0.00573	<0.0005	-	-	-
Anthracene by GCMS	0.0000808	<0.00005	0.000808	<0.0005	-	-	-
Phenanthrene by GCMS	0.000553	<0.00005	0.00553	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000156	<0.00005	0.00156	<0.0005	-	-	-
Pyrene by GCMS	0.000491	<0.00005	0.00491	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.00013	<0.00005	0.0013	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000175	<0.00005	0.00175	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00019	<0.00005	0.0019	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.0000999	<0.00002	0.000999	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000134	<0.00005	0.00134	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000566	<0.00005	0.000566	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00012	<0.00005	0.0012	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00295	<0.00082	0.0295	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.97
Conductivity (µS/cm)	5,160.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639180
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-F6
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.97
Conductivity (µS/cm)	5,160.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639201
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E7
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.331	<0.2	3.31	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00375	<0.0005	0.0375	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00156	<0.001	0.0156	<0.01	-	-	-
Copper	0.00166	<0.0003	0.0166	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00113	<0.001	0.0113	<0.01	-	-	-
Vanadium	0.0779	<0.001	0.779	<0.01	-	-	-
Zinc	0.00131	<0.001	0.0131	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000204	<0.00005	0.00204	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000135	<0.00005	0.00135	<0.0005	-	-	-
Pyrene by GCMS	0.000148	<0.00005	0.00148	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000114	<0.00005	0.00114	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000297	<0.00005	0.00297	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000196	<0.00005	0.00196	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000144	<0.00002	0.00144	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00017	<0.00005	0.0017	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000137	<0.00005	0.00137	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000165	<0.00005	0.00165	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00171	<0.00082	0.0171	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.21
Conductivity (µS/cm)	142.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639201
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E7
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	10.21
Conductivity (µS/cm)	142.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	3.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639205
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E7
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00207	<0.0005	0.0207	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00953	<0.001	0.0953	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.00206	<0.0002	0.0206	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00545	<0.001	0.0545	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0026	<0.0001	0.026	<0.001	-	-	-
Acenaphthene by GCMS	0.000258	<0.00005	0.00258	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.00465	<0.00005	0.0465	<0.0005	-	-	-
Anthracene by GCMS	0.000241	<0.00005	0.00241	<0.0005	-	-	-
Phenanthrene by GCMS	0.00481	<0.00005	0.0481	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000407	<0.00005	0.00407	<0.0005	-	-	-
Pyrene by GCMS	0.00331	<0.00005	0.0331	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000223	<0.00005	0.00223	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000149	<0.00005	0.00149	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000155	<0.00005	0.00155	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0168	<0.00082	0.168	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	12.32
Conductivity (µS/cm)	4,140.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	3.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.2
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639205
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E7
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.021	<0.01	0.21	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.021	<0.01	0.21	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.039	<0.01	0.39	<0.1	-	-	-
Toluene by GC	0.006	<0.004	0.06	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	12.32
Conductivity (µS/cm)	4,140.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639237
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-D4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000106	<0.00001	0.000106	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00652	<0.0005	0.0652	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00103	<0.001	0.0103	<0.01	-	-	-
Copper	0.00366	<0.0003	0.0366	<0.003	-	-	-
Lead	0.000226	<0.0002	0.00226	<0.002	-	-	-
Manganese	0.00593	<0.003	0.0593	<0.03	-	-	-
Nickel	0.00111	<0.0004	0.0111	<0.004	-	-	-
Selenium	0.00184	<0.001	0.0184	<0.01	-	-	-
Vanadium	0.0655	<0.001	0.655	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.365	<0.019	3.65	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000272	<0.00005	0.00272	<0.0005	-	-	-
Anthracene by GCMS	0.0000689	<0.00005	0.000689	<0.0005	-	-	-
Phenanthrene by GCMS	0.000206	<0.00005	0.00206	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000253	<0.00005	0.00253	<0.0005	-	-	-
Pyrene by GCMS	0.000213	<0.00005	0.00213	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000169	<0.00005	0.00169	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000345	<0.00005	0.00345	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000318	<0.00005	0.00318	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000167	<0.00002	0.00167	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000217	<0.00005	0.00217	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000245	<0.00005	0.00245	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000257	<0.00005	0.00257	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00273	<0.00082	0.0273	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	7.09
Conductivity (µS/cm)	216.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639237
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-D4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	7.09
Conductivity (µS/cm)	216.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639243
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-D4
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00844	<0.001	0.0844	<0.01	-	-	-
Copper	0.0154	<0.0003	0.154	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0027	<0.0004	0.027	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00859	<0.001	0.0859	<0.01	-	-	-
Zinc	0.00726	<0.001	0.0726	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.46
Conductivity (µS/cm)	993.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639243
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-D4
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.46
Conductivity (µS/cm)	993.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639252
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000234	<0.00001	0.000234	<0.0001	-	-	-
Total Cyanide (W)	0.262	<0.05	2.62	<0.5	-	-	-
Arsenic	0.00334	<0.0005	0.0334	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00393	<0.001	0.0393	<0.01	-	-	-
Copper	0.00173	<0.0003	0.0173	<0.003	-	-	-
Lead	0.00067	<0.0002	0.0067	<0.002	-	-	-
Manganese	0.0032	<0.003	0.032	<0.03	-	-	-
Nickel	0.000599	<0.0004	0.00599	<0.004	-	-	-
Selenium	0.00156	<0.001	0.0156	<0.01	-	-	-
Vanadium	0.0168	<0.001	0.168	<0.01	-	-	-
Zinc	0.00184	<0.001	0.0184	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.173	<0.019	1.73	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000333	<0.0001	0.00333	<0.001	-	-	-
Acenaphthene by GCMS	0.00015	<0.00005	0.0015	<0.0005	-	-	-
Acenaphthylene by GCMS	0.000236	<0.00005	0.00236	<0.0005	-	-	-
Fluoranthene by GCMS	0.002	<0.00005	0.02	<0.0005	-	-	-
Anthracene by GCMS	0.000285	<0.00005	0.00285	<0.0005	-	-	-
Phenanthrene by GCMS	0.00099	<0.00005	0.0099	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.00145	<0.00005	0.0145	<0.0005	-	-	-
Pyrene by GCMS	0.00163	<0.00005	0.0163	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000959	<0.00005	0.00959	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00254	<0.00005	0.0254	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00111	<0.00005	0.0111	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.00148	<0.00002	0.0148	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000419	<0.00005	0.00419	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.00176	<0.00005	0.0176	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00114	<0.00005	0.0114	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0165	<0.00082	0.165	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	9.11
Conductivity (µS/cm)	103.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

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CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639252
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E4
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.025	<0.01	0.25	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.025	<0.01	0.25	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.025	<0.01	0.25	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	9.11
Conductivity (µS/cm)	103.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639257
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000351	<0.00001	0.000351	<0.0001	-	-	-
Total Cyanide (W)	0.371	<0.05	3.71	<0.5	-	-	-
Arsenic	0.00247	<0.0005	0.0247	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00319	<0.001	0.0319	<0.01	-	-	-
Copper	0.00166	<0.0003	0.0166	<0.003	-	-	-
Lead	0.000386	<0.0002	0.00386	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00143	<0.001	0.0143	<0.01	-	-	-
Vanadium	0.0128	<0.001	0.128	<0.01	-	-	-
Zinc	0.00102	<0.001	0.0102	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.206	<0.019	2.06	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000284	<0.00005	0.00284	<0.0005	-	-	-
Anthracene by GCMS	0.0000534	<0.00005	0.000534	<0.0005	-	-	-
Phenanthrene by GCMS	0.000226	<0.00005	0.00226	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000108	<0.00005	0.00108	<0.0005	-	-	-
Pyrene by GCMS	0.000228	<0.00005	0.00228	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.0000612	<0.00005	0.000612	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000314	<0.00005	0.00314	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000183	<0.00005	0.00183	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000146	<0.00002	0.00146	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000171	<0.00005	0.00171	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000185	<0.00005	0.00185	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00196	<0.00082	0.0196	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	9.03
Conductivity (µS/cm)	112.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639257
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E4
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	9.03
Conductivity (µS/cm)	112.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639262
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E4
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000231	<0.00001	0.000231	<0.0001	-	-	-
Total Cyanide (W)	0.861	<0.05	8.61	<0.5	-	-	-
Arsenic	0.00303	<0.0005	0.0303	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00244	<0.001	0.0244	<0.01	-	-	-
Copper	0.0111	<0.0003	0.111	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00397	<0.0004	0.0397	<0.004	-	-	-
Selenium	0.0023	<0.001	0.023	<0.01	-	-	-
Vanadium	0.0413	<0.001	0.413	<0.01	-	-	-
Zinc	0.00136	<0.001	0.0136	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.297	<0.019	2.97	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000127	<0.00005	0.00127	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00012	<0.00005	0.0012	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.0000612	<0.00002	0.000612	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000634	<0.00005	0.000634	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000966	<0.00005	0.000966	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.03
Conductivity (µS/cm)	440.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

15/11/2018 13:32:09

13:30:42 15/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181031-51
Lab Sample Number(s)	18639262
Sampled Date	30-Oct-2018
Customer Sample Ref.	4E-E4
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	01-Nov-2018
pH (pH Units)	11.03
Conductivity (µS/cm)	440.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Test Completion Dates

Lab Sample No(s)	18639087	18639150	18639228	18639237	18639243	18639248	18639252	18639257	18639262	18639127
Customer Sample Ref.	4E-C4	4E-C4	4E-C4-V	4E-D4	4E-D4	4E-D4-V	4E-E4	4E-E4	4E-E4	4E-E5
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	2.25 - 2.25	0.50 - 0.50	1.20 - 1.20	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	07-Nov-2018			14-Nov-2018			07-Nov-2018		14-Nov-2018	14-Nov-2018
Ammoniacal Nitrogen	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018
Ammonium Soil by Titration	14-Nov-2018	15-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	15-Nov-2018	14-Nov-2018
Anions by Kone (soil)	09-Nov-2018			09-Nov-2018			09-Nov-2018		09-Nov-2018	09-Nov-2018
Asbestos ID in Solid Samples	09-Nov-2018			09-Nov-2018			09-Nov-2018		09-Nov-2018	09-Nov-2018
Calorific Value (S)*								12-Nov-2018		
CEN 10:1 Leachate (1 Stage)	02-Nov-2018	02-Nov-2018		01-Nov-2018	01-Nov-2018		02-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018
CEN Readings	06-Nov-2018	07-Nov-2018		07-Nov-2018	06-Nov-2018		06-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	14-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	09-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018
EPH CWG (Aliphatic) GC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018
EPH CWG (Aromatic) GC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018
GRO by GC-FID (S)	08-Nov-2018	08-Nov-2018	08-Nov-2018	12-Nov-2018	08-Nov-2018	08-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	09-Nov-2018
GRO by GC-FID (W)	08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018
Mercury Dissolved	14-Nov-2018	14-Nov-2018		14-Nov-2018	14-Nov-2018		14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Metals in solid samples by OES	08-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	07-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
PAH by GCMS	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
PAH Spec MS - Aqueous (W)	08-Nov-2018	08-Nov-2018		07-Nov-2018	08-Nov-2018		07-Nov-2018	07-Nov-2018	07-Nov-2018	08-Nov-2018
pH	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
pH Value	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018
Phenols by HPLC (S)	09-Nov-2018	13-Nov-2018	09-Nov-2018	12-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Sample description	31-Oct-2018	01-Nov-2018	01-Nov-2018	31-Oct-2018	31-Oct-2018	01-Nov-2018	01-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
Total Organic Carbon	13-Nov-2018	13-Nov-2018	13-Nov-2018	14-Nov-2018	14-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018
Total Sulphate	07-Nov-2018			07-Nov-2018			07-Nov-2018		07-Nov-2018	07-Nov-2018
Total Sulphur	08-Nov-2018			13-Nov-2018			08-Nov-2018		08-Nov-2018	02-Nov-2018
TPH CWG (W)	08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018		08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018
TPH CWG GC (S)	08-Nov-2018	08-Nov-2018	08-Nov-2018	12-Nov-2018	08-Nov-2018	08-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	09-Nov-2018
VOC MS (S)	08-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018

Lab Sample No(s)	18639132	18639144	18639155	18639201	18639205	18639218	18639137	18639169	18639212	18639092
Customer Sample Ref.	4E-E5	4E-E6	4E-E6	4E-E7	4E-E7	4E-E4-V	4E-E5-V	4E-E6-V	4E-E7-V	4E-F4
AGS Ref.										
Depth	0.80 - 0.80	0.25 - 0.25	0.80 - 0.80	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10	1.95 - 1.95	1.80 - 1.80	1.75 - 1.75	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		14-Nov-2018		14-Nov-2018						
Ammoniacal Nitrogen	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018					13-Nov-2018
Ammonium Soil by Titration	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Anions by Kone (soil)		09-Nov-2018		09-Nov-2018						
Asbestos ID in Solid Samples		09-Nov-2018		09-Nov-2018						
Asbestos Quantification - Full		14-Nov-2018		14-Nov-2018						
CEN 10:1 Leachate (1 Stage)	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018					01-Nov-2018
CEN Readings	07-Nov-2018	07-Nov-2018	06-Nov-2018	03-Nov-2018	07-Nov-2018					07-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	13-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018					09-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	08-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018	07-Nov-2018					08-Nov-2018
EPH CWG (Aliphatic) GC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	08-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018	07-Nov-2018					08-Nov-2018
EPH CWG (Aromatic) GC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	02-Nov-2018	05-Nov-2018	05-Nov-2018
GRO by GC-FID (S)	08-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018
GRO by GC-FID (W)	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018					07-Nov-2018
Mercury Dissolved	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018					14-Nov-2018
Metals in solid samples by OES	06-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018
PAH by GCMS	08-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	02-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
PAH Spec MS - Aqueous (W)	07-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018	07-Nov-2018					08-Nov-2018
pH	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
pH Value	13-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018					13-Nov-2018
Phenols by HPLC (S)	09-Nov-2018	12-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
Sample description	01-Nov-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
Total Organic Carbon	14-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	14-Nov-2018	13-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018
Total Sulphate		07-Nov-2018		07-Nov-2018						
Total Sulphur		02-Nov-2018		02-Nov-2018						
TPH CWG (W)	08-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018					08-Nov-2018
TPH CWG GC (S)	08-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018
VOC MS (S)	08-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181031-51	**Client Reference:**		**Report Number:**	481247
Location:	Llanwern	**Order Number:**	LLA502	**Superseded Report:**	480708

Lab Sample No(s)	18639099	18639174	18639180	18639105	18639188	18639109	18639115	18639121
Customer Sample Ref.	4E-F4	4E-F6	4E-F6	4E-F4-V	4E-F6-V	4E-G4	4E-G4	4E-G4-V
AGS Ref.								
Depth	1.00 - 1.00	0.30 - 0.30	0.80 - 0.80	2.10 - 2.10	1.55 - 1.55	0.50 - 0.50	1.00 - 1.00	1.90 - 1.90
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	14-Nov-2018		14-Nov-2018				14-Nov-2018	
Ammoniacal Nitrogen	13-Nov-2018	13-Nov-2018	13-Nov-2018			13-Nov-2018	13-Nov-2018	
Ammonium Soil by Titration	14-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	15-Nov-2018
Anions by Kone (soil)	09-Nov-2018		09-Nov-2018				09-Nov-2018	
Asbestos ID in Solid Samples	09-Nov-2018		09-Nov-2018				09-Nov-2018	
CEN 10:1 Leachate (1 Stage)	01-Nov-2018	01-Nov-2018	01-Nov-2018			01-Nov-2018	01-Nov-2018	
CEN Readings	06-Nov-2018	07-Nov-2018	06-Nov-2018			07-Nov-2018	07-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	09-Nov-2018	09-Nov-2018	09-Nov-2018			09-Nov-2018	09-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	07-Nov-2018	07-Nov-2018	07-Nov-2018			07-Nov-2018	08-Nov-2018	
EPH CWG (Aliphatic) GC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	07-Nov-2018	07-Nov-2018	07-Nov-2018			07-Nov-2018	08-Nov-2018	
EPH CWG (Aromatic) GC (S)	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018
GRO by GC-FID (S)	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018
GRO by GC-FID (W)	08-Nov-2018	07-Nov-2018	08-Nov-2018			07-Nov-2018	07-Nov-2018	
Mercury Dissolved	14-Nov-2018	14-Nov-2018	14-Nov-2018			14-Nov-2018	14-Nov-2018	
Metals in solid samples by OES	09-Nov-2018	12-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
PAH by GCMS	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018	06-Nov-2018
PAH Spec MS - Aqueous (W)	07-Nov-2018	07-Nov-2018	07-Nov-2018			07-Nov-2018	08-Nov-2018	
pH	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
pH Value	12-Nov-2018	12-Nov-2018	12-Nov-2018			13-Nov-2018	13-Nov-2018	
Phenols by HPLC (S)	09-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	09-Nov-2018
Sample description	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018	31-Oct-2018
Total Organic Carbon	13-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018
Total Sulphate	07-Nov-2018		07-Nov-2018				07-Nov-2018	
Total Sulphur	02-Nov-2018		08-Nov-2018				08-Nov-2018	
TPH CWG (W)	08-Nov-2018	07-Nov-2018	08-Nov-2018			07-Nov-2018	08-Nov-2018	
TPH CWG GC (S)	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018
VOC MS (S)	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018

CERTIFICATE OF ANALYSIS

Work Order	: **PR18B5431**	Issue Date	: 12-Nov-2018
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 181031-51	Page	: 1 of 2
Order number	: 181031-51	Date Samples Received	: 02-Nov-2018
		Quote number	: PR2018ALSAL-GB0001 (CZ-256-17-1008)
Site	: ----	Date of test	: 04-Nov-2018 - 12-Nov-2018
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.
The laboratory declares that the test results relate only to the listed samples.
The IC determination of chlorides, fluorides, sulfates and nitrates, as needed for the calculation of reported results, was performed using an accredited method of a subcontractor.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2005

Signatories		*Position*
Zdeněk Jirák		Environmental Business Unit Manager

L 1163

Analytical Results

Sub-Matrix: **INDUSTRIAL SOLID**			Client sample ID	**18641709 4E-E4**		----		----	
			Laboratory sample ID	PR18B5431-001		----		----	
			Client sampling date / time	30-Oct-2018 00:00		----		----	
Parameter	*Method*	*LOR*	*Unit*	**Result**	**MU**	**Result**	**MU**	**Result**	**MU**
Physical Parameters									
Gross Calorific Value in Dry Matter Q(V/gr/d)	I-CV-CALS	0.50	MJ/kg DW	**11.2**	± 10.4%	----	----	----	----
Gross Calorific Value Original Q(V/gr/ar)	I-CV-CALS	0.50	MJ/kg	**9.84**	± 10.6%	----	----	----	----
Net Calorific Value in Dry Matter Q(V/net/d)	I-CV-CALS	0.50	MJ/kg DW	**11.0**	± 10.4%	----	----	----	----
Net Calorific Value Original Q(V/net/ar)	I-CV-CALS	0.50	MJ/kg	**9.34**	± 10.6%	----	----	----	----
Water Analytical M(ad)	I-WA-GR	0.50	%	**0.95**	± 40.3%	----	----	----	----
Water Gross M(ex)	I-WG-GR	0.50	%	**11.6**	± 20.2%	----	----	----	----
Water Total M(ar)	I-WT-CC	0.50	%	**12.5**	----	----	----	----	----

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, delivery date in brackets without a time component will be displayed instead. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-CV-CALS	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN ISO 18125, CSN EN 15400, CSN EN 15170, CSN DIN 51900-1, CSN DIN 51900-2, CSN DIN 51900-3, CSN P CEN/TS 16023) Determination of gross calorific value by calorimetric method and calculation of net calorific value and emission factor by calculation from measured values.
I-WA-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WG-GR	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.
I-WT-CC	CZ_SOP_D06_07_041 (CSN 44 1377, CSN EN ISO 18134-1, CSN EN ISO 18134-2, CSN EN ISO 18134-3, CSN P CEN/TS 15414-1, CSN P CEN/TS 15414-2, CSN EN 15414-3, CSN EN12880, CSN EN14346, CSN EN 15002) Determination of analytical water and gross water by gravimetry and determination of total water by calculation from measured values.

Preparation Methods	*Method Descriptions*
Location of test performance: Bendlova 1687/7 Ceska Lipa Czech Republic 470 01	
I-PPBURN	CZ_SOP_D06_07_124.A (CSN ISO 1928, CSN EN 14918, CSN EN 15400, CSN EN 15170) Determination of gross calorific value by calorimetric method and calculation of net calorific value.
* S-PPHOM.07	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).
* S-PPHOM0.3	CZ_SOP_D06_07_P01 Preparation of solid samples for analysis (crushing, milling and pulverizing).

A `*` symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.

The calculation methods of summation parameters are available on request in the client service.

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
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Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date of report Generation:	23 March 2022
Customer:	Atkins Global Ltd
Sample Delivery Group (SDG):	181101-44
Your Reference:	Not Specified
Location:	Llanwern
Report No:	638773
Order Number:	LLA503

This report has been revised and directly supersedes 638626 in its entirety.

We received 24 samples on Thursday November 01, 2018 and 24 of these samples were scheduled for analysis which was completed on Tuesday March 22, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18646138	4E-A8		0.50 - 0.50	31/10/2018
18646160	4E-A8		1.00 - 1.00	31/10/2018
18646164	4E-A8V		1.70 - 1.70	31/10/2018
18646172	4E-B8		0.50 - 0.50	31/10/2018
18646181	4E-B8		1.00 - 1.00	31/10/2018
18646104	4E-B9		0.50 - 0.50	31/10/2018
18646112	4E-B9		1.00 - 1.00	31/10/2018
18646122	4E-B9		1.50 - 1.50	31/10/2018
18646189	4E-B8V		2.60 - 2.60	31/10/2018
18646130	4E-B9V		2.20 - 2.20	31/10/2018
18646094	4E-C9		0.50 - 0.50	31/10/2018
18646061	4E-D9		0.50 - 0.50	31/10/2018
18646072	4E-D9		1.00 - 1.00	31/10/2018
18646082	4E-D9V		2.00 - 2.00	31/10/2018
18646043	4E-E8		0.50 - 0.50	31/10/2018
18646154	4E-E8		1.00 - 1.00	31/10/2018
18646203	4E-E9		0.50 - 0.50	31/10/2018
18646208	4E-E9		1.00 - 1.00	31/10/2018
18646213	4E-E9		1.50 - 1.50	31/10/2018
18646197	4E-E8V		2.00 - 2.00	31/10/2018
18646221	4E-E9V		2.10 - 2.10	31/10/2018
18646227	4E-F9A		0.50 - 0.50	31/10/2018
18646235	4E-F9A		1.00 - 1.00	31/10/2018
18646052	4E-F9AV		2.00 - 2.00	31/10/2018

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	1846138			1846160			1846164		1846172			1846181			1846104			1846112	
			Customer Sample Reference	4E-A8			4E-A8			4E-A8V		4E-B8			4E-B8			4E-B9			4E-B9	
			AGS Reference																			
			Depth (m)	0.50 - 0.50			1.00 - 1.00			1.70 - 1.70		0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00	
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10						X					X						X			X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 17		X			X					X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 24			X			X		X			X			X			X				X
Anions by Kone (soil)	All	NDPs: 0 Tests: 10						X					X						X			X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10					X					X						X			X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3					X														X	
CEN Readings	All	NDPs: 0 Tests: 17	X				X					X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 41	X	X		X	X		X			X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 24		X			X			X			X			X			X				X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 24		X			X			X			X			X			X				X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 24			X			X			X			X			X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	

18646043	4E-E8		0.50 - 0.50	250g Amber Jar (ALE210)	S		x			x		x					x				x			
				1kg TUB	S			x					x				x		x		x				x
18646082	4E-D9V		2.00 - 2.00	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S					x						x				x					
18646072	4E-D9		1.00 - 1.00	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S					x						x				x					
				1kg TUB	S			x					x			x			x						x
18646061	4E-D9		0.50 - 0.50	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S		x			x		x					x				x				
				1kg TUB	S			x				x		x		x			x						x
18646094	4E-C9		0.50 - 0.50	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S		x			x		x					x				x				
				1kg TUB	S			x					x			x			x						x
18646130	4E-B9V		2.20 - 2.20	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S					x						x				x					
18646189	4E-B8V		2.60 - 2.60	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S					x						x				x					
18646122	4E-B9		1.50 - 1.50	60g VOC (ALE215)	S																		x		
				250g Amber Jar (ALE210)	S					x						x				x					
				1kg TUB	S			x					x			x			x						x
18646112	4E-B9		1.00 - 1.00	60g VOC (ALE215)	S																		x		

Validated

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	18646138			18646160			18646164		18646172			18646181			18646104			18646112	
			Customer Sample Reference	4E-A8			4E-A8			4E-A8V		4E-B8			4E-B8			4E-B9			4E-B9	
			AGS Reference																			
			Depth (m)	0.50 - 0.50			1.00 - 1.00			1.70 - 1.70		0.50 - 0.50			1.00 - 1.00			0.50 - 0.50			1.00 - 1.00	
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 17		X			X					X			X			X			X	
Metals in solid samples by OES	All	NDPs: 1 Tests: 24			X			X		X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 24			X			X		X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 17		X			X					X			X			X			X	
pH	All	NDPs: 0 Tests: 24			X			X		X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 17		X			X					X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 24			X			X		X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 24			X			X		X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 24			X			X		X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 10						X					X						X			X
Total Sulphur	All	NDPs: 0 Tests: 10						X					X						X			X
TPH CWG (W)	All	NDPs: 0 Tests: 17		X			X					X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 24			X			X		X			X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 24				X			X		X			X			X			X			

18646043	4E-E8		0.50 - 0.50	250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X	
				1kg TUB	S	X			X		X						X		
18646082	4E-D9V		2.00 - 2.00	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
18646072	4E-D9		1.00 - 1.00	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
				1kg TUB	S	X			X		X						X		
18646061	4E-D9		0.50 - 0.50	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X	
				1kg TUB	S	X			X		X						X		
18646094	4E-C9		0.50 - 0.50	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X		X	
				1kg TUB	S	X			X		X						X		
18646130	4E-B9V		2.20 - 2.20	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
18646189	4E-B8V		2.60 - 2.60	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
18646122	4E-B9		1.50 - 1.50	60g VOC (ALE215)	S														X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X				X	
				1kg TUB	S	X			X		X						X		
18646112	4E-B9		1.00 - 1.00	60g VOC (ALE215)	S														X

Validated

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	18646043	18646154			18646203			18646208			18646213			18646197		18646221		18646227	
			Customer Sample Reference	4E-E8	4E-E8			4E-E9			4E-E9			4E-E9			4E-E8V		4E-E9V		4E-F9A	
			AGS Reference																			
			Depth (m)	0.50 - 0.50	1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			2.00 - 2.00		2.10 - 2.10		0.50 - 0.50	
			Container	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10							X						X							
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 17			X			X			X			X							X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 24				X			X			X			X		X		X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 10							X						X							
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10						X						X								
CEN Readings	All	NDPs: 0 Tests: 17			X			X			X			X							X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 41			X	X		X	X		X	X		X	X		X		X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 17			X			X			X			X							X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17			X			X			X			X							X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 24				X			X			X			X		X		X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17			X			X			X			X							X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 24				X			X			X			X		X		X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 24	X				X			X			X			X		X		X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 17			X			X			X			X							X	
Mercury Dissolved	All	NDPs: 0 Tests: 17			X			X			X			X							X	

18646227		4E-F9A		0.50 - 0.50	60g VOC (ALE215)	S
	X					
	X					
			X			
			X			
	X					
	X					
	X		X			
	X					
	X					
			X			
	X					
			X			
X						
	X					
	X					

18646235		4E-F9A		1.00 - 1.00	60g VOC (ALE215)	S
			X			
			X			
			X			
			X			
			X			
			X			

18646052		4E-F9AV		2.00 - 2.00	60g VOC (ALE215)	S
			X			
			X			
			X			
			X			

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	18646043	18646154		18646203		18646208		18646213		18646197	18646221	18646227
			Customer Sample Reference	4E-E8	4E-E8		4E-E9		4E-E9		4E-E9		4E-E8V	4E-E9V	4E-F9A
			AGS Reference												
			Depth (m)	0.50 - 0.50	1.00 - 1.00		0.50 - 0.50		1.00 - 1.00		1.50 - 1.50		2.00 - 2.00	2.10 - 2.10	0.50 - 0.50
			Container	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 1 Tests: 24				N											
						X			X			X		X		X	X
PAH by GCMS	All	NDPs: 0 Tests: 24															
						X			X			X		X		X	X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 17															
					X			X			X					X	
pH	All	NDPs: 0 Tests: 24															
						X			X			X		X		X	X
pH Value	All	NDPs: 0 Tests: 17															
					X			X			X					X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 24															
						X			X			X		X			X
Sample description	All	NDPs: 0 Tests: 24															
						X			X			X		X			X
Total Organic Carbon	All	NDPs: 0 Tests: 24															
						X			X			X		X			X
Total Sulphate	All	NDPs: 0 Tests: 10															
								X				X					
Total Sulphur	All	NDPs: 0 Tests: 10															
								X				X					
TPH CWG (W)	All	NDPs: 0 Tests: 17															
					X			X			X					X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 24															
						X			X			X		X			X
VOC MS (S)	All	NDPs: 0 Tests: 24															
				X			X			X			X		X			

18646052	4E-F9AV		2.00 - 2.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X		X					X		
18646235	4E-F9A		1.00 - 1.00	60g VOC (ALE215)	S																		X
				250g Amber Jar (ALE210)	S		X		X			X			X		X		X			X		
				1kg TUB	S					X			X								X			
18646227	4E-F9A		0.50 - 0.50	60g VOC (ALE215)	S																		X

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18646138	4E-A8	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
18646160	4E-A8	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
18646164	4E-A8V	1.70 - 1.70	Dark Brown	Silty Clay	Vegetation	None
18646172	4E-B8	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646181	4E-B8	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18646104	4E-B9	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18646112	4E-B9	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18646122	4E-B9	1.50 - 1.50	Dark Brown	Sand	Vegetation	Stones
18646189	4E-B8V	2.60 - 2.60	Dark Brown	Clay Loam	Vegetation	None
18646130	4E-B9V	2.20 - 2.20	Dark Brown	Silty Clay	Vegetation	None
18646094	4E-C9	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18646061	4E-D9	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646072	4E-D9	1.00 - 1.00	Dark Brown	Sand	Vegetation	Stones
18646082	4E-D9V	2.00 - 2.00	Dark Brown	Silty Clay	Vegetation	None
18646043	4E-E8	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646154	4E-E8	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18646203	4E-E9	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646208	4E-E9	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18646213	4E-E9	1.50 - 1.50	Dark Brown	Sandy Loam	Vegetation	Stones
18646197	4E-E8V	2.00 - 2.00	Dark Brown	Silty Clay	Vegetation	None
18646221	4E-E9V	2.10 - 2.10	Grey	Clay	Vegetation	Stones
18646227	4E-F9A	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646235	4E-F9A	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18646052	4E-F9AV	2.00 - 2.00	Dark Brown	Loamy Sand	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.5	7.7	23	4.2	6.8	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	76.4 M	117 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0325 M	<0.01 M	0.0104 M	0.0107 M	0.0336 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0217 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0217 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.0759 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.559		0.186		0.409
Sulphate, Total potential	<0.06 %	TM132			1.68		0.558		1.23
Soil Organic Matter (SOM)	<0.35 %	TM132		51.4 #	4.91 #	0.905 #	1.68 #	1.7 #	8.29 #
pH	1 pH Units	TM133		10.8 M	12.5 M	8.14 M	12.8 M	12.8 M	12.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	5.52 M	18.9 M	<6 M	8.97 M	7.07 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	0.3 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		<9 M	115 M	27 M	987 M	825 M	220 M
Copper	<1.4 mg/kg	TM181		<14 M	11.1 M	12.1 M	16.2 M	33.4 M	19.4 M
Iron	<1000 mg/kg	TM181		133000 #	66500 #	38900 #	172000 #	194000 #	123000 #
Lead	<0.7 mg/kg	TM181		41.9 M	48.9 M	28.8 M	16.5 M	11.1 M	48.8 M
Manganese	<0.13 mg/kg	TM181		2070 M	13100 M	1750 M	31900 M	33200 M	19000 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		37.5 M	7.78 M	42.1 M	8.78 M	21.7 M	21.9 M
Selenium	<1 mg/kg	TM181		<10 #	6.07 #	<1 #	21.1 #	17.1 #	12.3 #
Vanadium	<0.2 mg/kg	TM181		163 #	117 #	54.2 #	499 #	456 #	269 #
Zinc	<1.9 mg/kg	TM181		145 M	201 M	116 M	55.3 M	75.5 M	113 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.533		0.315		1.01
Calcium	<21 mg/kg	TM224			191000		271000		223000
Magnesium	<8 mg/kg	TM224			16600		7450		9730
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.178 M		<0.004 M		0.442 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			N/A				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

Validated

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	13	32	24	5.7	8.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	65.2 M	193 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0112 M	0.0115 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0115 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.834				0.289	0.852
Sulphate, Total potential	<0.06 %	TM132		2.5				0.867	2.56
Soil Organic Matter (SOM)	<0.35 %	TM132		5.28 #	17.6 #	1.3 #	1.91 #	4.84 #	4.05 #
pH	1 pH Units	TM133		12.6 M	12.8 M	8.12 M	8.02 M	11.2 M	9.94 M
Cyanide, Total	<1 mg/kg	TM153		15.1 M	<1 M	<1 M	1.58 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.42 M	8.69 M	24 M	17.1 M	10.5 M	3.68 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	0.238 M	<0.02 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		255 M	150 M	30.1 M	36.6 M	76.4 M	53.4 M
Copper	<1.4 mg/kg	TM181		23.5 M	37 M	11.1 M	12.9 M	34.6 M	2.48 M
Iron	<1000 mg/kg	TM181		118000 #	135000 #	42000 #	35000 #	198000 #	36000 #
Lead	<0.7 mg/kg	TM181		48.7 M	75.1 M	30.8 M	29.8 M	77.3 M	11.5 M
Manganese	<0.13 mg/kg	TM181		21800 M	15900 M	397 M	367 M	11200 M	12000 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		25.6 M	26.5 M	39.1 M	39.9 M	39.8 M	4.31 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<1 #	<1 #	<10 #	5.93 #
Vanadium	<0.2 mg/kg	TM181		258 #	200 #	64.2 #	60.6 #	113 #	115 #
Zinc	<1.9 mg/kg	TM181		169 M	188 M	137 M	123 M	238 M	58.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		1.27				0.325	0.868
Calcium	<21 mg/kg	TM224		196000				133000	203000
Magnesium	<8 mg/kg	TM224		16400				24000	33500
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.604 M				0.0794 M	0.79 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					<0.001 #
Additional Asbestos Components (Using TM048)		TM304		None #					None #
Analysts Comments		TM304		N/A					N/A
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646072	18646082	18646043	18646154	18646203	18646208
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	31	6.6	7.9	7.4	4.5
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	171 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0112 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.115		0.671	
Sulphate, Total potential	<0.06 %	TM132				0.345		2.01	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.23 #	3.29 #	3.93 #	1.49 #	4.88 #	0.803 #
pH	1 pH Units	TM133		12.7 M	8.04 M	10.6 M	11.1 M	11 M	12.6 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	13.3 M	7.54 M	16.3 M	4.66 M	<6 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	<0.2 M	<0.2 M	<0.02 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		567 M	35.7 M	46.1 M	864 M	62.5 M	677 M
Copper	<1.4 mg/kg	TM181		15.4 M	13.7 M	16.5 M	59.4 M	8.23 M	14.3 M
Iron	<1000 mg/kg	TM181		106000 #	27400 #	144000 #		64800 #	181000 #
Lead	<0.7 mg/kg	TM181		21 M	30.5 M	69.2 M	17.1 M	22.6 M	<7 M
Manganese	<0.13 mg/kg	TM181		37700 M	721 M	6740 M	408000 M	13500 M	43600 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		9.49 M	36.4 M	21.5 M	49.2 M	6.74 M	7.52 M
Selenium	<1 mg/kg	TM181		22 #	<1 #	<10 #	35.7 #	5.56 #	25.3 #
Vanadium	<0.2 mg/kg	TM181		397 #	58.1 #	104 #	614 #	70.3 #	486 #
Zinc	<1.9 mg/kg	TM181		60.3 M	128 M	249 M	86.6 M	115 M	29.2 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.255		0.589	
Calcium	<21 mg/kg	TM224				173000		193000	
Magnesium	<8 mg/kg	TM224				12900		26100	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.0641 M		0.11 M	

Validated

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.2	37	23	7.3	4.6	25
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	322 M	152 M	<12 M	<12 M	177 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0109 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.739				0.395	
Sulphate, Total potential	<0.06 %	TM132		2.22				1.19	
Soil Organic Matter (SOM)	<0.35 %	TM132		1.14 #	6 #	1.13 #	7.78 #	<0.35 #	2.78 #
pH	1 pH Units	TM133		12.3 M	8.06 M	8.14 M	10.7 M	12.3 M	7.79 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	14.9 M	17.3 M	<6 M	<6 M	13 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	<0.02 M	<0.2 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		361 M	51 M	25.6 M	106 M	734 M	37.2 M
Copper	<1.4 mg/kg	TM181		17.2 M	16.8 M	16.6 M	18.2 M	19.3 M	12.8 M
Iron	<1000 mg/kg	TM181		114000 #	33500 #	27400 #	91900 #	186000 #	38500 #
Lead	<0.7 mg/kg	TM181		14.3 M	41.7 M	22.3 M	17.3 M	<7 M	27.6 M
Manganese	<0.13 mg/kg	TM181		35500 M	1390 M	432 M	10100 M	134000 M	825 M
Mercury	<0.1 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		49.6 M	25.8 M	30.3 M	16 M	9.16 M	34.9 M
Selenium	<1 mg/kg	TM181		17.9 #	<1 #	<1 #	<10 #	26.8 #	<1 #
Vanadium	<0.2 mg/kg	TM181		348 #	66.9 #	44.2 #	99.4 #	540 #	62.6 #
Zinc	<1.9 mg/kg	TM181		54.9 M	128 M	83.9 M	64.3 M	<19 M	107 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.923				0.574	
Calcium	<21 mg/kg	TM224		242000				288000	
Magnesium	<8 mg/kg	TM224		21600				9480	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0942 M				0.0639 M	

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.5	83.8	94.1	82	96.6	84.4
Acenaphthene-d10 % recovery**	%	TM218		95	81.5	87.6	87	82.8	88.7
Phenanthrene-d10 % recovery**	%	TM218		92.6	89.8	90.2	91.4	85.9	92.3
Chrysene-d12 % recovery**	%	TM218		77.7	92.5	87.7	97.1	86.3	96.9
Perylene-d12 % recovery**	%	TM218		70.4	83.3	86.1	89.3	82.1	88.6
Naphthalene	<0.009 mg/kg	TM218		0.556 M	0.29 M	0.0259 M	0.0326 M	0.0513 M	0.193 M
Acenaphthylene	<0.012 mg/kg	TM218		0.206 M	0.184 M	<0.012 M	<0.012 M	<0.012 M	0.0176 M
Acenaphthene	<0.008 mg/kg	TM218		0.0245 M	<0.04 M	<0.008 M	0.0213 M	0.0254 M	0.0491 M
Fluorene	<0.01 mg/kg	TM218		0.193 M	0.252 M	<0.01 M	0.013 M	0.0117 M	0.0327 M
Phenanthrene	<0.015 mg/kg	TM218		1.33 M	2.83 M	0.0333 M	0.291 M	0.431 M	0.955 M
Anthracene	<0.016 mg/kg	TM218		0.478 M	0.59 M	<0.016 M	0.0537 M	0.0686 M	0.12 M
Fluoranthene	<0.017 mg/kg	TM218		2.16 M	3.38 M	0.0686 M	0.752 M	1.11 M	1.33 M
Pyrene	<0.015 mg/kg	TM218		1.68 M	2.27 M	0.0474 M	0.689 M	0.946 M	1.15 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.987 M	1.21 M	0.0255 M	0.495 M	0.629 M	0.628 M
Chrysene	<0.01 mg/kg	TM218		0.929 M	1.05 M	0.0222 M	0.605 M	0.815 M	0.611 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.36 M	1.23 M	0.0282 M	0.464 M	1.4 M	0.832 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.509 M	0.491 M	<0.014 M	0.297 M	0.524 M	0.353 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.817 M	1.04 M	0.0198 M	0.593 M	0.74 M	0.651 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.567 M	0.815 M	<0.018 M	0.513 M	0.593 M	0.634 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.124 M	0.187 M	<0.023 M	0.119 M	0.135 M	0.144 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.515 M	0.783 M	<0.024 M	0.544 M	0.627 M	0.679 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		12.4	16.6	0.271	5.48	8.1	8.38

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

PAH by GCMS

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+$@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94	84.1	92.7	90.7	85.8	85.4
Acenaphthene-d10 % recovery**	%	TM218		95.1	97.1	86.3	86.3	92.6	91.6
Phenanthrene-d10 % recovery**	%	TM218		91	92.8	88.1	89.1	97.9	93.5
Chrysene-d12 % recovery**	%	TM218		76.6	78.2	83.5	85	96.1	97.8
Perylene-d12 % recovery**	%	TM218		86.1	71.5	81.2	85.1	83.1	85.1
Naphthalene	<0.009 mg/kg	TM218		0.47 M	1.76 M	0.0553 M	0.118 M	0.146 M	<0.045 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.112 M	<0.012 M	0.0342 M	0.0412 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		0.164 M	0.766 M	<0.008 M	0.0657 M	0.0978 M	<0.04 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.236 M	<0.01 M	0.0538 M	0.26 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		1.87 M	4.05 M	0.0446 M	0.193 M	0.769 M	0.132 M
Anthracene	<0.016 mg/kg	TM218		0.278 M	0.504 M	<0.016 M	0.0589 M	0.0823 M	<0.08 M
Fluoranthene	<0.017 mg/kg	TM218		2.78 M	3.72 M	0.0708 M	0.297 M	0.332 M	0.262 M
Pyrene	<0.015 mg/kg	TM218		2.29 M	2.9 M	0.0519 M	0.253 M	0.419 M	0.218 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.49 M	1.3 M	0.0235 M	0.113 M	0.113 M	0.114 M
Chrysene	<0.01 mg/kg	TM218		1.59 M	1.33 M	0.0277 M	0.128 M	0.15 M	0.112 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.37 M	1.16 M	0.0308 M	0.179 M	0.158 M	0.138 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.723 M	0.519 M	<0.014 M	0.0575 M	0.0609 M	<0.07 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.76 M	1.18 M	<0.015 M	0.105 M	0.1 M	0.13 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.13 M	1.04 M	<0.018 M	0.064 M	0.0931 M	0.123 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.252 M	0.206 M	<0.023 M	<0.023 M	<0.023 M	<0.115 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.25 M	0.944 M	<0.024 M	0.08 M	0.109 M	0.155 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		18.4	21.7	0.304	1.8	2.93	1.38

Validated

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646072	18646082	18646043	18646154	18646203	18646208
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85	93.9	96.3	93.1	86.4	106
Acenaphthene-d10 % recovery**	%	TM218		88.9	86.4	90.8	91.7	89.4	85.2
Phenanthrene-d10 % recovery**	%	TM218		92.3	93.4	90.4	91.5	93.9	92.8
Chrysene-d12 % recovery**	%	TM218		77.9	91.2	81.4	81.5	96.2	96.9
Perylene-d12 % recovery**	%	TM218		72.8	87.7	83.1	88.8	86.8	95.2
Naphthalene	<0.009 mg/kg	TM218		0.0114 M	0.325 M	0.415 M	0.152 M	0.083 M	0.24 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0689 M	0.145 M	0.0329 M	<0.06 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		0.0102 M	0.0384 M	0.0623 M	0.0792 M	0.0619 M	<0.04 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0199 M	0.207 M	0.0507 M	<0.05 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		0.347 M	0.168 M	1.42 M	0.873 M	0.545 M	0.943 M
Anthracene	<0.016 mg/kg	TM218		0.0753 M	0.0535 M	0.289 M	0.156 M	0.179 M	0.113 M
Fluoranthene	<0.017 mg/kg	TM218		0.74 M	0.387 M	1.73 M	2.15 M	1.86 M	2.43 M
Pyrene	<0.015 mg/kg	TM218		0.589 M	0.331 M	1.24 M	2.68 M	2.47 M	2.55 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.219 M	0.168 M	0.829 M	1.46 M	1.2 M	1.87 M
Chrysene	<0.01 mg/kg	TM218		0.259 M	0.173 M	0.681 M	1.7 M	1.17 M	1.92 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.269 M	0.227 M	1.15 M	2.44 M	1.23 M	3.36 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.137 M	0.0953 M	0.355 M	0.762 M	0.479 M	1.34 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.235 M	0.161 M	0.664 M	1.54 M	1.02 M	2.23 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.15 M	0.1 M	0.479 M	1.1 M	0.756 M	1.35 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0358 M	<0.023 M	0.134 M	0.254 M	0.143 M	0.397 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.209 M	0.107 M	0.518 M	1.15 M	0.669 M	1.61 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.29	2.42	10.3	16.6	11.9	20.4

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.4	103	91.8	84.5	84.9	97.1
Acenaphthene-d10 % recovery**	%	TM218		93.8	97.1	97.4	91.1	91.3	94.8
Phenanthrene-d10 % recovery**	%	TM218		98	99.8	101	96.1	96.5	97.7
Chrysene-d12 % recovery**	%	TM218		85.8	93.1	90.4	94.4	93.4	86.2
Perylene-d12 % recovery**	%	TM218		78.9	92.6	82.2	88.6	90.6	91.9
Naphthalene	<0.009 mg/kg	TM218		0.709 M	0.983 M	0.524 M	0.117 M	0.229 M	0.639 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0132 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0385 M	0.029 M	0.0198 M	0.0211 M	0.0137 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0189 M	0.0277 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		1.28 M	0.279 M	0.0379 M	0.111 M	0.259 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.105 M	<0.016 M	<0.016 M	0.0222 M	0.0291 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		2.71 M	0.293 M	0.0497 M	0.239 M	0.987 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		2.72 M	0.24 M	0.0442 M	0.253 M	0.987 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.33 M	0.111 M	<0.014 M	0.195 M	0.756 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		1.5 M	0.128 M	0.017 M	0.215 M	0.818 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.65 M	0.161 M	<0.015 M	0.22 M	0.944 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.79 M	0.066 M	<0.014 M	0.0965 M	0.458 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.44 M	0.0986 M	<0.015 M	0.214 M	0.921 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.13 M	0.0661 M	<0.018 M	0.2 M	0.748 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.212 M	<0.023 M	<0.023 M	0.0358 M	0.137 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.3 M	0.0748 M	<0.024 M	0.18 M	0.681 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		16.9	2.56	0.693	2.12	7.97	0.639

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		71	84	103	100	102	92
GRO TOT (Moisture Corrected) (HS_1D_TOTAL)	<0.1 mg/kg	TM089		<0.2 M	4.36 M	<0.2 M	<0.2 M	<0.2 M	5.18 M
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089		<0.02	0.0336	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089		<0.02	0.137	<0.02	<0.02	<0.02	0.0627
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089		<0.02	0.444	<0.02	<0.02	<0.02	0.495
Aliphatics >C10-C12 (HS_1D_AL)	<0.01 mg/kg	TM089		<0.02	2.04	<0.02	<0.02	<0.02	2.52
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.47	34.2	<0.1	0.617	<0.1	110
Aliphatics >C16-C21	<0.1 mg/kg	TM173		23.9	79.4	<0.1	0.203	<0.1	255
Aliphatics >C21-C35	<0.1 mg/kg	TM173		131	404	<0.1	17.4	37.1	1140
Aliphatics >C35-C44	<0.1 mg/kg	TM173		27.3	91.4	<0.1	3.88	6.78	225
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		188	609	<0.1	22.1	43.9	1730
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	0.065
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089		<0.02	0.0314	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089		<0.02	0.296	<0.02	<0.02	<0.02	0.33
Aromatics >EC10-EC12 (HS_1D_AR)	<0.01 mg/kg	TM089		<0.02	1.36	<0.02	<0.02	<0.02	1.68
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.33	22.4	<0.1	1.04	1.65	23.5
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		15.9	213	<0.1	7.05	9.49	75.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		65.3	449	2.3	46	66.9	313
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		28.9	123	3.01	15.8	26.4	90.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		12.2	40.7	1.66	5.9	9.22	30.9
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		113	808	5.32	69.9	104	502
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		301	1420	5.32	92.1	148	2240

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		90	127	123	102	91	84
GRO TOT (Moisture Corrected) (HS_1D_TOTAL)	<0.1 mg/kg	TM089		13.7 M	26.8 M	2.19 M	<0.2 M	4.12 M	0.292 M
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089		<0.02	0.0495	0.0219	<0.02	<0.02	<0.02
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089		0.0616	0.198	0.0876	<0.02	0.07	<0.02
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089		1.14	3	0.299	<0.02	0.373	<0.02
Aliphatics >C10-C12 (HS_1D_AL)	<0.01 mg/kg	TM089		7.01	11.6	0.945	<0.02	2.05	0.154
Aliphatics >C12-C16	<0.1 mg/kg	TM173		177	292	<0.1	<0.1	120	7.49
Aliphatics >C16-C21	<0.1 mg/kg	TM173		210	469	2.5	<0.1	290	20.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1100	2220	21.3	<0.1	2010	275
Aliphatics >C35-C44	<0.1 mg/kg	TM173		237	472	0.638	<0.1	590	150
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		1720	3450	24.5	<0.1	3010	453
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089		0.0358	1.73	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089		<0.02	0.398	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089		0.758	2	0.2	<0.02	0.249	<0.02
Aromatics >EC10-EC12 (HS_1D_AR)	<0.01 mg/kg	TM089		4.67	7.75	0.629	<0.02	1.36	0.102
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		41.6	72.4	1.08	<0.1	43	2.4
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		71.3	152	2.64	0.428	95.3	15.5
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		295	561	10.7	2.07	377	294
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		110	149	3.55	3.3	160	294
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		43.3	50.7	1.53	1.96	58.7	135
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		518	935	18	5.8	675	606
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		2250	4410	44.6	5.8	3690	1060

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646072	18646082	18646043	18646154	18646203	18646208
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		98.4	88	71	93.5	93	101
GRO TOT (Moisture Corrected) (HS_1D_TOTAL)	<0.1 mg/kg	TM089		0.242 M	2.5 M	0.387 M	2.56 M	1.2 M	5.51 M
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089		<0.02	0.0187	<0.02	<0.01	<0.02	0.023
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089		0.0246	0.0518	0.045	0.0281	0.0367	0.0513
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089		<0.02	0.753	0.0364	0.0562	0.04	0.627
Aliphatics >C10-C12 (HS_1D_AL)	<0.01 mg/kg	TM089		0.108	0.657	0.16	1.45	0.638	2.31
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.17	0.107	2.54	13.8	<0.1	1.66
Aliphatics >C16-C21	<0.1 mg/kg	TM173		20.5	11.1	11.3	31.8	25.9	3.03
Aliphatics >C21-C35	<0.1 mg/kg	TM173		133	4.58	82.3	254	118	44.4
Aliphatics >C35-C44	<0.1 mg/kg	TM173		61.7	<0.1	26.3	124	51.3	29.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		222	15.8	122	424	196	79
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089		<0.02	0.0504	<0.02	<0.01	<0.02	0.196
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089		<0.02	0.0259	<0.02	0.013	<0.02	0.349
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089		<0.02	0.503	0.0246	0.0378	0.0259	0.418
Aromatics >EC10-EC12 (HS_1D_AR)	<0.01 mg/kg	TM089		0.0717	0.438	0.107	0.964	0.426	1.54
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3	0.472	3.68	4.93	3.43	0.565
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		29.9	8.99	11.6	30.2	25.6	12.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		165	5.72	52.9	208	111	99.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		115	<0.1	26.8	139	74.7	60.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		51.1	<0.1	11	55.6	32	25.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		313	15.2	95	382	215	174
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		535	33.5	218	809	412	258

Validated

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		101	106	101	103	104	97.5
GRO TOT (Moisture Corrected) (HS_1D_TOTAL)	<0.1 mg/kg	TM089		6.41 M	1.98 M	2.69 M	<0.1 M	0.947 M	2.39 M
Aliphatics >C5-C6 (HS_1D_AL)	<0.01 mg/kg	TM089		0.0283	0.0143	0.0494	<0.01	<0.02	0.0201
Aliphatics >C6-C8 (HS_1D_AL)	<0.01 mg/kg	TM089		0.0523	0.0445	0.0806	<0.01	0.0304	0.0884
Aliphatics >C8-C10 (HS_1D_AL)	<0.01 mg/kg	TM089		0.384	0.159	0.209	<0.01	0.0933	0.423
Aliphatics >C10-C12 (HS_1D_AL)	<0.01 mg/kg	TM089		3.28	0.984	1.28	<0.01	0.405	0.945
Aliphatics >C12-C16	<0.1 mg/kg	TM173		12.9	23.6	<0.1	<0.1	1.14	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		36.3	27.9	<0.1	1.06	0.612	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		173	5.03	<0.1	46	13.9	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		92.2	<0.1	<0.1	7.73	4.65	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		314	56.5	<0.1	54.8	20.3	<0.1
Aromatics >EC5-EC7 (HS_1D_AR)	<0.01 mg/kg	TM089		0.0871	<0.01	0.0702	<0.01	0.0252	<0.02
Aromatics >EC7-EC8 (HS_1D_AR)	<0.01 mg/kg	TM089		0.142	<0.01	<0.02	<0.01	0.0566	<0.02
Aromatics >EC8-EC10 (HS_1D_AR)	<0.01 mg/kg	TM089		0.256	0.105	0.14	<0.01	0.0618	0.283
Aromatics >EC10-EC12 (HS_1D_AR)	<0.01 mg/kg	TM089		2.18	0.657	0.853	<0.01	0.269	0.63
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.23	9.37	<0.1	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		24.4	17.5	<0.1	6.22	3.41	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		145	8.02	<0.1	29.3	22.5	1.47
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		103	<0.1	<0.1	14	13.7	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		44.1	0.197	<0.1	5.25	6.11	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		275	34.9	<0.1	49.6	39.7	1.47
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		596	93.3	2.68	104	60.9	3.86

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	105	106	104	80	104
Toluene-d8**	%	TM116		92.8	97.8	101	101	95.9	94.8
4-Bromofluorobenzene**	%	TM116		75.8	93.1	100	94	95	92.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.691 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	104	108	109	110	117
Toluene-d8**	%	TM116		97.3	91.3	101	97.2	94.5	90.1
4-Bromofluorobenzene**	%	TM116		93.5	86.4	100	95.7	86.6	82.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	0.869 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	0.193 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	0.16 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	0.119 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.229 M	0.835 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	1.34	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646072	18646082	18646043	18646154	18646203	18646208
			AGS Reference						
Dibromofluoromethane**	%	TM116		91.3	105	102	116	105	99.1
Toluene-d8**	%	TM116		93.1	96.6	96.7	84.3	99	95.8
4-Bromofluorobenzene**	%	TM116		96	94.7	82.4	71.6	93.7	94.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	0.0991 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	0.101 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	0.189 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	1.25 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	111	107	106	107	107
Toluene-d8**	%	TM116		98.9	95.2	97.2	97.3	101	97
4-Bromofluorobenzene**	%	TM116		95.9	94.1	94.9	98.2	99.2	95.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	0.171 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		0.077 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.706 M	0.402 M	<0.13 M	<0.13 M	1.64 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

Asbestos Identification - Solid Samples

Results Legend
ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5&+$@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4E-A8 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 10:28:00 181101-44 18646160 TM048	09/11/2018	Marcin Magdziarek	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4E-B8 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 10:28:00 181101-44 18646172 TM048	09/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4E-B9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 10:28:00 181101-44 18646104 TM048	06/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4E-B9 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 10:28:00 181101-44 18646112 TM048	09/11/2018	Renata Bozhkov	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4E-C9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 10:28:00 181101-44 18646094 TM048	13/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4E-D9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 10:28:00 181101-44 18646061 TM048	09/11/2018	Barbara Urbanek-Walsh	Fibre bundles in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4E-E8 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 10:28:00 181101-44 18646043 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4E-E9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 10:28:00 181101-44 18646203 TM048	09/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4E-E9 1.50 - 1.50 SOLID 31/10/2018 00:00:00 01/11/2018 10:28:00 181101-44 18646213 TM048	09/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	4E-F9A 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 10:28:00 181101-44 18646235 TM048	09/11/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	4E-A8	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	1.00 - 1.00					
Sample Type	SOLID					
Date Sampled	31/10/2018 00:00:00					
Date Received	01/11/2018 10:28:00					
SDG	181101-44					
Original Sample	18646160					
Method Number	TM304					
Cust. Sample Ref.	4E-B9	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	1.00 - 1.00					
Sample Type	SOLID					
Date Sampled	31/10/2018 00:00:00					
Date Received	01/11/2018 10:28:00					
SDG	181101-44					
Original Sample	18646112					
Method Number	TM304					
Cust. Sample Ref.	4E-D9	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.50 - 0.50					
Sample Type	SOLID					
Date Sampled	31/10/2018 00:00:00					
Date Received	01/11/2018 10:28:00					
SDG	181101-44					
Original Sample	18646061					
Method Number	TM304					

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646043
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	0.00199	<0.0005	0.0199	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00185	<0.0003	0.0185	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00147	<0.001	0.0147	<0.01	-	-	-
Vanadium	0.0968	<0.001	0.968	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	235.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646043
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	235.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646061
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0116	<0.001	0.116	<0.01	-	-	-
Copper	0.00365	<0.0003	0.0365	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	0.000615	<0.0002	0.00615	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000565	<0.0004	0.00565	<0.004	-	-	-
Selenium	0.00177	<0.001	0.0177	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00496	<0.001	0.0496	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	0.000103	<0.000005	0.00103	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000287	<0.000005	0.000287	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000154	<0.000005	0.000154	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000465	<0.000005	0.000465	<0.00005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00105	<0.000005	0.0105	<0.00005	-	-	-
Fluorene by GCMS	0.0000233	<0.000005	0.000233	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Naphthalene by GCMS	0.000204	<0.00001	0.00204	<0.0001	-	-	-
PAH 16 EPA Total by GCMS	0.00383	<0.000082	0.0383	<0.00082	-	-	-
Phenanthrene by GCMS	0.00161	<0.000005	0.0161	<0.00005	-	-	-
Pyrene by GCMS	0.000621	<0.000005	0.00621	<0.00005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.82
Conductivity (µS/cm)	273.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646061
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.82
Conductivity (µS/cm)	273.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646072
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	0.0000132	<0.00001	0.000132	<0.0001	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00567	<0.001	0.0567	<0.01	-	-	-
Vanadium	0.082	<0.001	0.82	<0.01	-	-	-
Zinc	0.00186	<0.001	0.0186	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	9.92
Conductivity (µS/cm)	449.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646072
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	9.92
Conductivity (µS/cm)	449.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646094
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-C9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	0.00252	<0.0005	0.0252	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00507	<0.0003	0.0507	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000479	<0.0004	0.00479	<0.004	-	-	-
Selenium	0.00554	<0.001	0.0554	<0.01	-	-	-
Vanadium	0.103	<0.001	1.03	<0.01	-	-	-
Zinc	0.00105	<0.001	0.0105	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	0.000302	<0.00005	0.00302	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0000803	<0.00005	0.000803	<0.0005	-	-	-
Fluorene by GCMS	0.000553	<0.00005	0.00553	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Naphthalene by GCMS	0.000565	<0.0001	0.00565	<0.001	-	-	-
PAH 16 EPA Total by GCMS	0.00216	<0.00082	0.0216	<0.0082	-	-	-
Phenanthrene by GCMS	0.00058	<0.00005	0.0058	<0.0005	-	-	-
Pyrene by GCMS	0.0000757	<0.00005	0.000757	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	254.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.895

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646094
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-C9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.034	<0.01	0.34	<0.1	-	-	-
Aromatics >EC16-EC21	0.02	<0.01	0.2	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.054	<0.01	0.54	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.087	<0.01	0.87	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	254.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.895

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646104
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00306	<0.0003	0.0306	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	0.0283	<0.0002	0.283	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000445	<0.0004	0.00445	<0.004	-	-	-
Selenium	0.00112	<0.001	0.0112	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0131	<0.001	0.131	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	0.000177	<0.00005	0.00177	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Naphthalene by GCMS	0.0006	<0.0001	0.006	<0.001	-	-	-
PAH 16 EPA Total by GCMS	0.000983	<0.00082	0.00983	<0.0082	-	-	-
Phenanthrene by GCMS	0.000206	<0.00005	0.00206	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.123	<0.05	1.23	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.04
Conductivity (µS/cm)	701.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646104
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.012	<0.01	0.12	<0.1	-	-	-
Aliphatics >C10-C12	0.054	<0.01	0.54	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.036	<0.01	0.36	<0.1	-	-	-
Aromatics >EC12-EC16	0.047	<0.01	0.47	<0.1	-	-	-
Aromatics >EC16-EC21	0.032	<0.01	0.32	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.079	<0.01	0.79	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.201	<0.01	2.01	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.04
Conductivity (µS/cm)	701.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646112
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00162	<0.001	0.0162	<0.01	-	-	-
Copper	0.00683	<0.0003	0.0683	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	0.0164	<0.0002	0.164	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00253	<0.0004	0.0253	<0.004	-	-	-
Selenium	0.00139	<0.001	0.0139	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.023	<0.001	0.23	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	0.0000595	<0.00005	0.000595	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0000959	<0.00005	0.000959	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Naphthalene by GCMS	0.00045	<0.0001	0.0045	<0.001	-	-	-
PAH 16 EPA Total by GCMS	0.000957	<0.00082	0.00957	<0.0082	-	-	-
Phenanthrene by GCMS	0.000287	<0.00005	0.00287	<0.0005	-	-	-
Pyrene by GCMS	0.0000636	<0.00005	0.000636	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.074	<0.05	0.74	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.06
Conductivity (µS/cm)	706.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646112
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.031	<0.01	0.31	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.021	<0.01	0.21	<0.1	-	-	-
Aromatics >EC12-EC16	0.05	<0.01	0.5	<0.1	-	-	-
Aromatics >EC16-EC21	0.042	<0.01	0.42	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.092	<0.01	0.92	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.166	<0.01	1.66	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.06
Conductivity (µS/cm)	706.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646122
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00208	<0.001	0.0208	<0.01	-	-	-
Copper	0.00389	<0.0003	0.0389	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	0.0578	<0.0002	0.578	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00235	<0.0004	0.0235	<0.004	-	-	-
Selenium	0.00133	<0.001	0.0133	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0137	<0.001	0.137	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	0.00296	<0.00005	0.0296	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	0.000369	<0.00005	0.00369	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000707	<0.00005	0.00707	<0.0005	-	-	-
Fluorene by GCMS	0.00065	<0.00005	0.0065	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Naphthalene by GCMS	0.00782	<0.0001	0.0782	<0.001	-	-	-
PAH 16 EPA Total by GCMS	0.0161	<0.00082	0.161	<0.0082	-	-	-
Phenanthrene by GCMS	0.00314	<0.00005	0.0314	<0.0005	-	-	-
Pyrene by GCMS	0.000413	<0.00005	0.00413	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.367	<0.05	3.67	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.012	<0.01	0.12	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	742.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.887

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646122
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.023	<0.01	0.23	<0.1	-	-	-
Aliphatics >C10-C12	0.095	<0.01	0.95	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.105	<0.01	1.05	<0.1	-	-	-
Aromatics >C7-C8	0.022	<0.01	0.22	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.042	<0.01	0.42	<0.1	-	-	-
Aromatics >EC10-EC12	0.064	<0.01	0.64	<0.1	-	-	-
Aromatics >EC12-EC16	0.055	<0.01	0.55	<0.1	-	-	-
Aromatics >EC16-EC21	0.062	<0.01	0.62	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.117	<0.01	1.17	<0.1	-	-	-
Benzene by GC	0.105	<0.007	1.05	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.484	<0.01	4.84	<0.1	-	-	-
Toluene by GC	0.022	<0.004	0.22	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.015	<0.008	0.15	<0.08	-	-	-
o Xylene by GC	0.008	<0.003	0.08	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.023	<0.011	0.23	<0.11	-	-	-
Sum of BTEX by GC	0.15	<0.028	1.5	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	742.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.887

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646138
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	0.00191	<0.0005	0.0191	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00194	<0.0003	0.0194	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00217	<0.001	0.0217	<0.01	-	-	-
Vanadium	0.0733	<0.001	0.733	<0.01	-	-	-
Zinc	0.00145	<0.001	0.0145	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000116	<0.00002	0.00116	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	0.000136	<0.00005	0.00136	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000897	<0.00005	0.000897	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000164	<0.00005	0.00164	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
Phenanthrene by GCMS	0.000127	<0.00005	0.00127	<0.0005	-	-	-
Pyrene by GCMS	0.000155	<0.00005	0.00155	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.81
Conductivity (µS/cm)	296.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646138
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.81
Conductivity (µS/cm)	296.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646154
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	0.0000111	<0.00001	0.000111	<0.0001	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00751	<0.001	0.0751	<0.01	-	-	-
Copper	0.00209	<0.0003	0.0209	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	0.000575	<0.0002	0.00575	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00527	<0.001	0.0527	<0.01	-	-	-
Zinc	0.00183	<0.001	0.0183	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	0.000117	<0.00005	0.00117	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.0000544	<0.00005	0.000544	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0014	<0.00005	0.014	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Naphthalene by GCMS	0.000801	<0.0001	0.00801	<0.001	-	-	-
PAH 16 EPA Total by GCMS	0.00576	<0.00082	0.0576	<0.0082	-	-	-
Phenanthrene by GCMS	0.0016	<0.00005	0.016	<0.0005	-	-	-
Pyrene by GCMS	0.00179	<0.00005	0.0179	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.225	<0.05	2.25	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.62
Conductivity (µS/cm)	1,360.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646154
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.121	<0.01	1.21	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.081	<0.01	0.81	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.225	<0.01	2.25	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.62
Conductivity (µS/cm)	1,360.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646160
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	0.000506	<0.0005	0.00506	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00171	<0.001	0.0171	<0.01	-	-	-
Copper	0.0179	<0.0003	0.179	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	0.00227	<0.0002	0.0227	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0023	<0.0004	0.023	<0.004	-	-	-
Selenium	0.0018	<0.001	0.018	<0.01	-	-	-
Vanadium	0.00776	<0.001	0.0776	<0.01	-	-	-
Zinc	0.0229	<0.001	0.229	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	0.000597	<0.00005	0.00597	<0.0005	-	-	-
Acenaphthylene by GCMS	0.0000675	<0.00005	0.000675	<0.0005	-	-	-
Anthracene by GCMS	0.000686	<0.00005	0.00686	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.0000989	<0.00005	0.000989	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	0.000106	<0.00005	0.00106	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000683	<0.00005	0.000683	<0.0005	-	-	-
Chrysene by GCMS	0.000115	<0.00005	0.00115	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.00138	<0.00005	0.0138	<0.0005	-	-	-
Fluorene by GCMS	0.00104	<0.00005	0.0104	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Naphthalene by GCMS	0.00206	<0.0001	0.0206	<0.001	-	-	-
PAH 16 EPA Total by GCMS	0.0116	<0.00082	0.116	<0.0082	-	-	-
Phenanthrene by GCMS	0.00451	<0.00005	0.0451	<0.0005	-	-	-
Pyrene by GCMS	0.000863	<0.00005	0.00863	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.72
Conductivity (µS/cm)	1,760.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646160
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.096	<0.01	0.96	<0.1	-	-	-
Aliphatics >C21-C35	0.088	<0.01	0.88	<0.1	-	-	-
Total Aliphatics >C12-C35	0.184	<0.01	1.84	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.184	<0.01	1.84	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.184	<0.01	1.84	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.72
Conductivity (µS/cm)	1,760.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646172
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0168	<0.001	0.168	<0.01	-	-	-
Copper	0.00564	<0.0003	0.0564	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	0.00287	<0.0002	0.0287	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00863	<0.001	0.0863	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000819	<0.00005	0.000819	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000573	<0.00005	0.000573	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000292	<0.00005	0.00292	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
PAH 16 EPA Total by GCMS	0.000874	<0.00082	0.00874	<0.0082	-	-	-
Phenanthrene by GCMS	0.000168	<0.00005	0.00168	<0.0005	-	-	-
Pyrene by GCMS	0.000274	<0.00005	0.00274	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	710.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.896

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646172
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	710.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.896

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646181
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0196	<0.001	0.196	<0.01	-	-	-
Copper	0.0046	<0.0003	0.046	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	0.00342	<0.0002	0.0342	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00545	<0.001	0.0545	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	0.000102	<0.00005	0.00102	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000111	<0.00005	0.00111	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	0.000126	<0.00005	0.00126	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000709	<0.00005	0.000709	<0.0005	-	-	-
Chrysene by GCMS	0.000138	<0.00005	0.00138	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.00158	<0.00005	0.0158	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Naphthalene by GCMS	0.000244	<0.0001	0.00244	<0.001	-	-	-
PAH 16 EPA Total by GCMS	0.00479	<0.00082	0.0479	<0.0082	-	-	-
Phenanthrene by GCMS	0.00133	<0.00005	0.0133	<0.0005	-	-	-
Pyrene by GCMS	0.00109	<0.00005	0.0109	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.12
Conductivity (µS/cm)	763.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646181
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.12
Conductivity (µS/cm)	763.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646203
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	0.0000115	<0.00001	0.000115	<0.0001	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000344	<0.0003	0.00344	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00639	<0.001	0.0639	<0.01	-	-	-
Vanadium	0.013	<0.001	0.13	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Naphthalene by GCMS	0.000104	<0.0001	0.00104	<0.001	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000166	<0.00005	0.00166	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	314.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646203
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	314.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646208
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00439	<0.001	0.0439	<0.01	-	-	-
Copper	0.00192	<0.0003	0.0192	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	0.000737	<0.0002	0.00737	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00124	<0.001	0.0124	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00832	<0.001	0.0832	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	0.0000937	<0.00005	0.000937	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	0.000173	<0.00005	0.00173	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000772	<0.00005	0.00772	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000979	<0.00002	0.00979	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	0.00122	<0.00005	0.0122	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000703	<0.00005	0.00703	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000668	<0.00005	0.00668	<0.0005	-	-	-
Chrysene by GCMS	0.00101	<0.00005	0.0101	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000177	<0.00005	0.00177	<0.0005	-	-	-
Fluoranthene by GCMS	0.0024	<0.00005	0.024	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000476	<0.00005	0.00476	<0.0005	-	-	-
Naphthalene by GCMS	0.00079	<0.0001	0.0079	<0.001	-	-	-
PAH 16 EPA Total by GCMS	0.0134	<0.00082	0.134	<0.0082	-	-	-
Phenanthrene by GCMS	0.00171	<0.00005	0.0171	<0.0005	-	-	-
Pyrene by GCMS	0.00224	<0.00005	0.0224	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.19	<0.05	1.9	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.01	<0.01	0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.93
Conductivity (µS/cm)	376.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646208
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.089	<0.01	0.89	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.012	<0.01	0.12	<0.1	-	-	-
Aromatics >EC10-EC12	0.059	<0.01	0.59	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.044	<0.01	0.44	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.044	<0.01	0.44	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.234	<0.01	2.34	<0.1	-	-	-
Toluene by GC	0.005	<0.004	0.05	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.93
Conductivity (µS/cm)	376.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646213
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00397	<0.001	0.0397	<0.01	-	-	-
Copper	0.00168	<0.0003	0.0168	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	0.000576	<0.0002	0.00576	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00116	<0.001	0.0116	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00418	<0.001	0.0418	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	0.000445	<0.00005	0.00445	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000243	<0.00005	0.00243	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Naphthalene by GCMS	0.000217	<0.0001	0.00217	<0.001	-	-	-
PAH 16 EPA Total by GCMS	0.00147	<0.00082	0.0147	<0.0082	-	-	-
Phenanthrene by GCMS	0.000369	<0.00005	0.00369	<0.0005	-	-	-
Pyrene by GCMS	0.000195	<0.00005	0.00195	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.227	<0.05	2.27	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	307.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646213
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.121	<0.01	1.21	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.081	<0.01	0.81	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.014	<0.01	0.14	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.014	<0.01	0.14	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.241	<0.01	2.41	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	307.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646227
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00666	<0.001	0.0666	<0.01	-	-	-
Vanadium	0.0176	<0.001	0.176	<0.01	-	-	-
Zinc	0.00225	<0.001	0.0225	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.0000707	<0.00002	0.000707	<0.0002	-	-	-
Benzo(b)fluoranthene by GCMS	0.00011	<0.00005	0.0011	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000618	<0.00005	0.000618	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000103	<0.00005	0.00103	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Naphthalene by GCMS	0.000181	<0.0001	0.00181	<0.001	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000117	<0.00005	0.00117	<0.0005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	342.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646227
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	342.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646235
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00513	<0.001	0.0513	<0.01	-	-	-
Copper	0.00229	<0.0003	0.0229	<0.003	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
Lead	0.00104	<0.0002	0.0104	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00781	<0.001	0.0781	<0.01	-	-	-
PAH Spec MS - Aqueous (W)							
Acenaphthene by GCMS	0.0000356	<0.000005	0.000356	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	0.0000347	<0.000005	0.000347	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00017	<0.000005	0.0017	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000204	<0.000002	0.000204	<0.00002	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000673	<0.000005	0.000673	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Chrysene by GCMS	0.000201	<0.000005	0.00201	<0.00005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00201	<0.000005	0.0201	<0.00005	-	-	-
Fluorene by GCMS	0.00000809	<0.000005	0.0000809	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Naphthalene by GCMS	0.000922	<0.00001	0.00922	<0.0001	-	-	-
PAH 16 EPA Total by GCMS	0.00622	<0.000082	0.0622	<0.00082	-	-	-
Phenanthrene by GCMS	0.00094	<0.000005	0.0094	<0.00005	-	-	-
Pyrene by GCMS	0.00179	<0.000005	0.0179	<0.00005	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.87
Conductivity (µS/cm)	341.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646235
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	0.004	<0.004	0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.87
Conductivity (µS/cm)	341.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

Notification of NDPs (No determination possible)

Date Received : 01/11/2018 10:28:09

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
18646154	4E-E8	1.00 - 1.00	Metals in solid samples by OES	See Comments for cancellation details
18646154	4E-E8	1.00 - 1.00	Metals in solid samples by OES	See Comments for cancellation details
18646154	4E-E8	1.00 - 1.00	Metals in solid samples by OES	See Comments for cancellation details
18646154	4E-E8	1.00 - 1.00	Metals in solid samples by OES	See Comments for cancellation details

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626
Client Ref.: Not Specified **Location:** Llanwern

Test Completion Dates

Lab Sample No(s)	18646138	18646160	18646164	18646172	18646181	18646104	18646112	18646122	18646189	18646130
Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9	4E-B9	4E-B9	4E-B8V	4E-B9V
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		14-Nov-2018		15-Nov-2018		14-Nov-2018	14-Nov-2018			
Ammoniacal Nitrogen	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018		
Ammonium Soil by Titration	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Anions by Kone (soil)		15-Nov-2018		09-Nov-2018		15-Nov-2018	15-Nov-2018			
Asbestos ID in Solid Samples		09-Nov-2018		09-Nov-2018		06-Nov-2018	09-Nov-2018			
Asbestos Quantification - Full		15-Nov-2018					15-Nov-2018			
CEN 10:1 Leachate (1 Stage)	03-Nov-2018	03-Nov-2018		03-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018		
CEN Readings	10-Nov-2018	10-Nov-2018		10-Nov-2018	10-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018		
Cyanide Comp/Free/Total/Thiocyanate	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018
Dissolved Metals by ICP-MS	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018		
EPH CWG (Aliphatic) Aqueous GC (W)	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018		
EPH CWG (Aliphatic) GC (S)	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	08-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018		
EPH CWG (Aromatic) GC (S)	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	08-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018
GRO by GC-FID (S)	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (W)	10-Nov-2018	10-Nov-2018		10-Nov-2018	10-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018		
Mercury Dissolved	09-Nov-2018	09-Nov-2018		09-Nov-2018	09-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018		
Metals in solid samples by OES	15-Nov-2018	09-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	09-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018
PAH by GCMS	13-Nov-2018	09-Nov-2018	07-Nov-2018	09-Nov-2018	07-Nov-2018	09-Nov-2018	02-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018
PAH Spec MS - Aqueous (W)	12-Nov-2018	12-Nov-2018		12-Nov-2018	12-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018		
pH	12-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018
pH Value	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018		
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Sample description	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018
Total Organic Carbon	14-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Total Sulphate		14-Nov-2018		14-Nov-2018		14-Nov-2018	14-Nov-2018			
Total Sulphur		14-Nov-2018		13-Nov-2018		13-Nov-2018	14-Nov-2018			
TPH CWG (W)	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018		
TPH CWG GC (S)	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
VOC MS (S)	14-Nov-2018	13-Nov-2018	12-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	12-Nov-2018	08-Nov-2018

Lab Sample No(s)	18646094	18646061	18646072	18646082	18646043	18646154	18646203	18646208	18646213	18646197
Customer Sample Ref.	4E-C9	4E-D9	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9	4E-E9	4E-E8V
AGS Ref.										
Depth	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	14-Nov-2018	15-Nov-2018			14-Nov-2018		14-Nov-2018		15-Nov-2018	
Ammoniacal Nitrogen	13-Nov-2018	14-Nov-2018	13-Nov-2018		13-Nov-2018	14-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	
Ammonium Soil by Titration	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Anions by Kone (soil)	15-Nov-2018	15-Nov-2018			15-Nov-2018		15-Nov-2018		15-Nov-2018	
Asbestos ID in Solid Samples	13-Nov-2018	09-Nov-2018			09-Nov-2018		09-Nov-2018		09-Nov-2018	
Asbestos Quantification - Full		15-Nov-2018								
CEN 10:1 Leachate (1 Stage)	02-Nov-2018	03-Nov-2018	02-Nov-2018		03-Nov-2018	02-Nov-2018	03-Nov-2018	03-Nov-2018	02-Nov-2018	
CEN Readings	09-Nov-2018	10-Nov-2018	09-Nov-2018		09-Nov-2018	09-Nov-2018	10-Nov-2018	10-Nov-2018	09-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018
Dissolved Metals by ICP-MS	13-Nov-2018	13-Nov-2018	12-Nov-2018		13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	09-Nov-2018	14-Nov-2018	08-Nov-2018		13-Nov-2018	09-Nov-2018	13-Nov-2018	13-Nov-2018	08-Nov-2018	
EPH CWG (Aliphatic) GC (S)	05-Nov-2018	06-Nov-2018	05-Nov-2018	07-Nov-2018	07-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018	08-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	09-Nov-2018	14-Nov-2018	08-Nov-2018		13-Nov-2018	09-Nov-2018	13-Nov-2018	13-Nov-2018	08-Nov-2018	
EPH CWG (Aromatic) GC (S)	05-Nov-2018	06-Nov-2018	05-Nov-2018	07-Nov-2018	07-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018	08-Nov-2018
GRO by GC-FID (S)	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018
GRO by GC-FID (W)	08-Nov-2018	10-Nov-2018	08-Nov-2018		10-Nov-2018	08-Nov-2018	10-Nov-2018	10-Nov-2018	08-Nov-2018	
Mercury Dissolved	15-Nov-2018	15-Nov-2018	14-Nov-2018		09-Nov-2018	14-Nov-2018	09-Nov-2018	09-Nov-2018	14-Nov-2018	
Metals in solid samples by OES	15-Nov-2018	15-Nov-2018	15-Nov-2018	12-Nov-2018	15-Nov-2018	22-Mar-2022	15-Nov-2018	13-Nov-2018	15-Nov-2018	16-Nov-2018
PAH by GCMS	09-Nov-2018	09-Nov-2018	08-Nov-2018	07-Nov-2018	07-Nov-2018	02-Nov-2018	07-Nov-2018	07-Nov-2018	08-Nov-2018	07-Nov-2018
PAH Spec MS - Aqueous (W)	08-Nov-2018	14-Nov-2018	08-Nov-2018		12-Nov-2018	08-Nov-2018	12-Nov-2018	12-Nov-2018	08-Nov-2018	
pH	13-Nov-2018	12-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018
pH Value	13-Nov-2018	12-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Sample description	01-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018
Total Organic Carbon	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Total Sulphate	14-Nov-2018	14-Nov-2018			14-Nov-2018		12-Nov-2018		14-Nov-2018	
Total Sulphur	14-Nov-2018	14-Nov-2018			13-Nov-2018		13-Nov-2018		13-Nov-2018	
TPH CWG (W)	09-Nov-2018	14-Nov-2018	08-Nov-2018		13-Nov-2018	09-Nov-2018	13-Nov-2018	13-Nov-2018	08-Nov-2018	
TPH CWG GC (S)	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018
VOC MS (S)	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	08-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Report Number:** 638773 **Superseded Report:** 638626

Client Ref.: Not Specified **Location:** Llanwern

Lab Sample No(s)	18646221	18646227	18646235	18646052
Customer Sample Ref.	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
AGS Ref.				
Depth	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)			15-Nov-2018	
Ammoniacal Nitrogen		13-Nov-2018	14-Nov-2018	
Ammonium Soil by Titration	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Anions by Kone (soil)			15-Nov-2018	
Asbestos ID in Solid Samples			09-Nov-2018	
CEN 10:1 Leachate (1 Stage)		03-Nov-2018	03-Nov-2018	
CEN Readings		10-Nov-2018	10-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	15-Nov-2018	14-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS		13-Nov-2018	14-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)		13-Nov-2018	13-Nov-2018	
EPH CWG (Aliphatic) GC (S)	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)		13-Nov-2018	13-Nov-2018	
EPH CWG (Aromatic) GC (S)	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018
GRO by GC-FID (S)	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (W)		10-Nov-2018	10-Nov-2018	
Mercury Dissolved		09-Nov-2018	14-Nov-2018	
Metals in solid samples by OES	14-Nov-2018	15-Nov-2018	15-Nov-2018	14-Nov-2018
PAH by GCMS	08-Nov-2018	07-Nov-2018	07-Nov-2018	02-Nov-2018
PAH Spec MS - Aqueous (W)		12-Nov-2018	14-Nov-2018	
pH	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018
pH Value		13-Nov-2018	13-Nov-2018	
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Sample description	01-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018
Total Organic Carbon	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Total Sulphate			14-Nov-2018	
Total Sulphur			13-Nov-2018	
TPH CWG (W)		13-Nov-2018	13-Nov-2018	
TPH CWG GC (S)	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018
VOC MS (S)	08-Nov-2018	08-Nov-2018	09-Nov-2018	08-Nov-2018

ALS Environmental, Land	Issue No. 4
	Date: 03/03/2020
QF.7.5.1 Data Amendments Form	Issued and Authorised by Quality Manager

SDG	Sample Event	Sample ID	Date Amended	Amendment Reason	Analysis/Component	Authorised (Lab Manager)	Previous Value	New Value	Units	Supersedes Report
181101-44	18646154	4E-E8 [1.00 - 1.00]	22/03/2022	Analytical/Quality Issue	Metals OES Iron	C Birtwistle	2390000	NDP	mg/kg	482023

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	16 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181101-44
Your Reference:	
Location:	Llanwern
Report No:	481388

This report has been revised and directly supersedes 481387 in its entirety.

We received 24 samples on Thursday November 01, 2018 and 24 of these samples were scheduled for analysis which was completed on Friday November 16, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18646138	4E-A8		0.50 - 0.50	31/10/2018
18646160	4E-A8		1.00 - 1.00	31/10/2018
18646164	4E-A8V		1.70 - 1.70	31/10/2018
18646172	4E-B8		0.50 - 0.50	31/10/2018
18646181	4E-B8		1.00 - 1.00	31/10/2018
18646104	4E-B9		0.50 - 0.50	31/10/2018
18646112	4E-B9		1.00 - 1.00	31/10/2018
18646122	4E-B9		1.50 - 1.50	31/10/2018
18646189	4E-B8V		2.60 - 2.60	31/10/2018
18646130	4E-B9V		2.20 - 2.20	31/10/2018
18646094	4E-C9		0.50 - 0.50	31/10/2018
18646061	4E-D9		0.50 - 0.50	31/10/2018
18646072	4E-D9		1.00 - 1.00	31/10/2018
18646082	4E-D9V		2.00 - 2.00	31/10/2018
18646043	4E-E8		0.50 - 0.50	31/10/2018
18646154	4E-E8		1.00 - 1.00	31/10/2018
18646203	4E-E9		0.50 - 0.50	31/10/2018
18646208	4E-E9		1.00 - 1.00	31/10/2018
18646213	4E-E9		1.50 - 1.50	31/10/2018
18646197	4E-E8V		2.00 - 2.00	31/10/2018
18646221	4E-E9V		2.10 - 2.10	31/10/2018
18646227	4E-F9A		0.50 - 0.50	31/10/2018
18646235	4E-F9A		1.00 - 1.00	31/10/2018
18646052	4E-F9AV		2.00 - 2.00	31/10/2018

Maximum Sample/Coolbox Temperature (°C) : **9.9**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																	
			18646138			18646160			18646164		18646172			18646181			18646104			18646112	
			Customer Sample Reference																	
			4E-A8			4E-A8			4E-A8V		4E-B8			4E-B8			4E-B9			4E-B9	
			AGS Reference																	
			Depth (m)			0.50 - 0.50			1.00 - 1.00		1.70 - 1.70			0.50 - 0.50			1.00 - 1.00			0.50 - 0.50	
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10						X					X						X			X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 10						X					X						X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10					X					X						X			X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3					X															X	
CEN Readings	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 41	X	X		X	X		X			X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 24			X			X			X			X			X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)			Customer Sample Reference			AGS Reference			Depth (m)			Container			Sample Type		
			18646138	18646160	18646164	18646172	18646181	18646104	18646112											
			4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9	4E-B9											
			0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00											
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 17	X			X			X			X			X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 17	X			X			X			X			X			X			X	
pH	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 17	X			X			X			X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 10					X						X						X			X
Total Sulphur	All	NDPs: 0 Tests: 10					X						X						X			X
TPH CWG (W)	All	NDPs: 0 Tests: 17	X			X			X			X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 24			X			X			X			X			X			X		

18646043	4E-E8		0.50 - 0.50	250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x			x		x						x					
18646082	4E-D9V		2.00 - 2.00	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
18646072	4E-D9		1.00 - 1.00	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
				1kg TUB	S	x			x		x						x					
18646061	4E-D9		0.50 - 0.50	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x			x		x						x					
18646094	4E-C9		0.50 - 0.50	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x			x		x						x					
18646130	4E-B9V		2.20 - 2.20	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
18646189	4E-B8V		2.60 - 2.60	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
18646122	4E-B9		1.50 - 1.50	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
				1kg TUB	S	x			x		x						x					
18646112	4E-B9		1.00 - 1.00	60g VOC (ALE215)	S																x	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

	Lab Sample No(s)			18646043	18646154			18646203			18646208			18646213			18646197		18646221	18646227	
	Customer Sample Reference			4E-E8	4E-E8			4E-E9			4E-E9			4E-E9			4E-E8V		4E-E9V	4E-F9A	
	AGS Reference																				
	Depth (m)			0.50 - 0.50	1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			2.00 - 2.00		2.10 - 2.10	0.50 - 0.50	
	Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
	Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10							X						X							
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 17			X			X			X			X							X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 24				X			X			X			X		X		X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 10							X						X							
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10						X						X								
CEN Readings	All	NDPs: 0 Tests: 17			X			X			X			X							X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 41			X	X		X	X		X	X		X	X		X		X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 17			X			X			X			X							X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17			X			X			X			X							X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 24				X			X			X			X		X		X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17			X			X			X			X							X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 24				X			X			X			X		X		X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 24		X			X			X			X			X		X		X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 17			X			X			X			X							X	
Mercury Dissolved	All	NDPs: 0 Tests: 17			X			X			X			X							X	

18646052						
4E-F9AV						
2.00 - 2.00						
60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	
S	S	S	S	S	S	
			X			
				X		
	X		X			
			X			
				X		
				X		
	X		X	X		
				X		
				X		
				X		
			X			
				X		
			X			
				X		
			X

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18646043	18646154			18646203			18646208			18646213			18646197		18646221		18646227
Customer Sample Reference			4E-E8	4E-E8			4E-E9			4E-E9			4E-E9			4E-E8V		4E-E9V		4E-F9A
AGS Reference																				
Depth (m)			0.50 - 0.50	1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			2.00 - 2.00		2.10 - 2.10		0.50 - 0.50
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
PAH by GCMS	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 17		X			X			X			X							X	
pH	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
pH Value	All	NDPs: 0 Tests: 17		X			X			X			X							X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
Sample description	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
Total Organic Carbon	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
Total Sulphate	All	NDPs: 0 Tests: 10						X						X							
Total Sulphur	All	NDPs: 0 Tests: 10						X						X							
TPH CWG (W)	All	NDPs: 0 Tests: 17		X			X			X			X							X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
VOC MS (S)	All	NDPs: 0 Tests: 24	X			X			X			X			X		X		X		

18646052	4E-F9AV		2.00 - 2.00	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X		X			X			X		X		X				X	
18646235	4E-F9A		1.00 - 1.00	60g VOC (ALE215)	S																		X	
				250g Amber Jar (ALE210)	S		X		X			X			X		X		X		X		X	
				1kg TUB	S					X			X									X		
18646227	4E-F9A		0.50 - 0.50	60g VOC (ALE215)	S																		X	

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18646138	4E-A8	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
18646160	4E-A8	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
18646164	4E-A8V	1.70 - 1.70	Dark Brown	Silty Clay	Vegetation	None
18646172	4E-B8	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646181	4E-B8	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18646104	4E-B9	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18646112	4E-B9	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18646122	4E-B9	1.50 - 1.50	Dark Brown	Sand	Vegetation	Stones
18646189	4E-B8V	2.60 - 2.60	Dark Brown	Clay Loam	Vegetation	None
18646130	4E-B9V	2.20 - 2.20	Dark Brown	Silty Clay	Vegetation	None
18646094	4E-C9	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18646061	4E-D9	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646072	4E-D9	1.00 - 1.00	Dark Brown	Sand	Vegetation	Stones
18646082	4E-D9V	2.00 - 2.00	Dark Brown	Silty Clay	Vegetation	None
18646043	4E-E8	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646154	4E-E8	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18646203	4E-E9	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646208	4E-E9	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18646213	4E-E9	1.50 - 1.50	Dark Brown	Sandy Loam	Vegetation	Stones
18646197	4E-E8V	2.00 - 2.00	Dark Brown	Silty Clay	Vegetation	None
18646221	4E-E9V	2.10 - 2.10	Grey	Clay	Vegetation	Stones
18646227	4E-F9A	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646235	4E-F9A	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18646052	4E-F9AV	2.00 - 2.00	Dark Brown	Loamy Sand	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.5	7.7	23	4.2	6.8	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	76.4 M	117 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0325 M	<0.01 M	0.0104 M	0.0107 M	0.0336 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0217 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0217 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.0759 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.559		0.186		0.409
Sulphate, Total potential	<0.06 %	TM132			1.68		0.558		1.23
Soil Organic Matter (SOM)	<0.35 %	TM132		51.4 #	4.91 #	0.905 #	1.68 #	1.7 #	8.29 #
pH	1 pH Units	TM133		10.8 M	12.5 M	8.14 M	12.8 M	12.8 M	12.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	5.52 M	18.9 M	<6 M	8.97 M	7.07 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	0.3 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		<9 M	115 M	27 M	987 M	825 M	220 M
Copper	<1.4 mg/kg	TM181		<14 M	11.1 M	12.1 M	16.2 M	33.4 M	19.4 M
Iron	<1000 mg/kg	TM181		133000 #	66500 #	38900 #	172000 #	194000 #	123000 #
Lead	<0.7 mg/kg	TM181		41.9 M	48.9 M	28.8 M	16.5 M	11.1 M	48.8 M
Manganese	<0.13 mg/kg	TM181		2070 M	13100 M	1750 M	31900 M	33200 M	19000 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		37.5 M	7.78 M	42.1 M	8.78 M	21.7 M	21.9 M
Selenium	<1 mg/kg	TM181		<10 #	6.07 #	<1 #	21.1 #	17.1 #	12.3 #
Vanadium	<0.2 mg/kg	TM181		163 #	117 #	54.2 #	499 #	456 #	269 #
Zinc	<1.9 mg/kg	TM181		145 M	201 M	116 M	55.3 M	75.5 M	113 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.533		0.315		1.01
Calcium	<21 mg/kg	TM224			191000		271000		223000
Magnesium	<8 mg/kg	TM224			16600		7450		9730
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.178 M		<0.004 M		0.442 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			N/A				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	13	32	24	5.7	8.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	65.2 M	193 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0112 M	0.0115 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0115 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.834				0.289	0.852
Sulphate, Total potential	<0.06 %	TM132		2.5				0.867	2.56
Soil Organic Matter (SOM)	<0.35 %	TM132		5.28 #	17.6 #	1.3 #	1.91 #	4.84 #	4.05 #
pH	1 pH Units	TM133		12.6 M	12.8 M	8.12 M	8.02 M	11.2 M	9.94 M
Cyanide, Total	<1 mg/kg	TM153		15.1 M	<1 M	<1 M	1.58 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.42 M	8.69 M	24 M	17.1 M	10.5 M	3.68 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	0.238 M	<0.02 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		255 M	150 M	30.1 M	36.6 M	76.4 M	53.4 M
Copper	<1.4 mg/kg	TM181		23.5 M	37 M	11.1 M	12.9 M	34.6 M	2.48 M
Iron	<1000 mg/kg	TM181		118000 #	135000 #	42000 #	35000 #	198000 #	36000 #
Lead	<0.7 mg/kg	TM181		48.7 M	75.1 M	30.8 M	29.8 M	77.3 M	11.5 M
Manganese	<0.13 mg/kg	TM181		21800 M	15900 M	397 M	367 M	11200 M	12000 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		25.6 M	26.5 M	39.1 M	39.9 M	39.8 M	4.31 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<1 #	<1 #	<10 #	5.93 #
Vanadium	<0.2 mg/kg	TM181		258 #	200 #	64.2 #	60.6 #	113 #	115 #
Zinc	<1.9 mg/kg	TM181		169 M	188 M	137 M	123 M	238 M	58.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		1.27				0.325	0.868
Calcium	<21 mg/kg	TM224		196000				133000	203000
Magnesium	<8 mg/kg	TM224		16400				24000	33500
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.604 M				0.0794 M	0.79 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					<0.001 #
Additional Asbestos Components (Using TM048)		TM304		None #					None #
Analysts Comments		TM304		N/A					N/A
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			4E-D9	1.00 - 1.00	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646072	
			4E-D9V	2.00 - 2.00	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646082	
			4E-E8	0.50 - 0.50	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646043	
			4E-E8	1.00 - 1.00	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646154	
			4E-E9	0.50 - 0.50	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646203	
			4E-E9	1.00 - 1.00	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646208	
Moisture Content Ratio (% of as received sample)	%	PM024	11	31	6.6	7.5	7.4	4.5			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	171 M	<12 M	<12 M	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)	0.0112 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M			
Sulphur, Total	<0.02 %	TM132			0.115		0.671				
Sulphate, Total potential	<0.06 %	TM132			0.345		2.01				
Soil Organic Matter (SOM)	<0.35 %	TM132	1.23 #	3.29 #	3.93 #	1.49 #	4.88 #	0.803 #			
pH	1 pH Units	TM133	12.7 M	8.04 M	10.6 M	11.1 M	11 M	12.6 M			
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M	<1 M	<1 M			
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M	<1 M	<1 M			
Arsenic	<0.6 mg/kg	TM181	<6 M	13.3 M	7.54 M	16.3 M	4.66 M	<6 M			
Cadmium	<0.02 mg/kg	TM181	<0.2 M	<0.02 M	<0.2 M	<0.2 M	<0.02 M	<0.2 M			
Chromium	<0.9 mg/kg	TM181	567 M	35.7 M	46.1 M	864 M	62.5 M	677 M			
Copper	<1.4 mg/kg	TM181	15.4 M	13.7 M	16.5 M	59.4 M	8.23 M	14.3 M			
Iron	<1000 mg/kg	TM181	106000 #	27400 #	144000 #	2390000 #	64800 #	181000 #			
Lead	<0.7 mg/kg	TM181	21 M	30.5 M	69.2 M	17.1 M	22.6 M	<7 M			
Manganese	<0.13 mg/kg	TM181	37700 M	721 M	6740 M	408000 M	13500 M	43600 M			
Mercury	<0.14 mg/kg	TM181	<1.4 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M			
Nickel	<0.2 mg/kg	TM181	9.49 M	36.4 M	21.5 M	49.2 M	6.74 M	7.52 M			
Selenium	<1 mg/kg	TM181	22 #	<1 #	<10 #	35.7 #	5.56 #	25.3 #			
Vanadium	<0.2 mg/kg	TM181	397 #	58.1 #	104 #	614 #	70.3 #	486 #			
Zinc	<1.9 mg/kg	TM181	60.3 M	128 M	249 M	86.6 M	115 M	29.2 M			
Sulphate, acid soluble (total)	<0.02 %	TM221			0.255		0.589				
Calcium	<21 mg/kg	TM224			173000		193000				
Magnesium	<8 mg/kg	TM224			12900		26100				
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0641 M		0.11 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
AGS Reference						

Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	8.2	37	23	7.3	4.6	25
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	322 M	152 M	<12 M	<12 M	177 M
Phenol	<0.01 mg/kg	TM062 (S)	0.0109 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132	0.739				0.395	
Sulphate, Total potential	<0.06 %	TM132	2.22				1.19	
Soil Organic Matter (SOM)	<0.35 %	TM132	1.14 #	6 #	1.13 #	7.78 #	<0.35 #	2.78 #
pH	1 pH Units	TM133	12.3 M	8.06 M	8.14 M	10.7 M	12.3 M	7.79 M
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181	<6 M	14.9 M	17.3 M	<6 M	<6 M	13 M
Cadmium	<0.02 mg/kg	TM181	<0.2 M	<0.02 M	<0.02 M	<0.2 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181	361 M	51 M	25.6 M	106 M	734 M	37.2 M
Copper	<1.4 mg/kg	TM181	17.2 M	16.8 M	16.6 M	18.2 M	19.3 M	12.8 M
Iron	<1000 mg/kg	TM181	114000 #	33500 #	27400 #	91900 #	186000 #	38500 #
Lead	<0.7 mg/kg	TM181	14.3 M	41.7 M	22.3 M	17.3 M	<7 M	27.6 M
Manganese	<0.13 mg/kg	TM181	35500 M	1390 M	432 M	10100 M	134000 M	825 M
Mercury	<0.14 mg/kg	TM181	<1.4 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181	49.6 M	25.8 M	30.3 M	16 M	9.16 M	34.9 M
Selenium	<1 mg/kg	TM181	17.9 #	<1 #	<1 #	<10 #	26.8 #	<1 #
Vanadium	<0.2 mg/kg	TM181	348 #	66.9 #	44.2 #	99.4 #	540 #	62.6 #
Zinc	<1.9 mg/kg	TM181	54.9 M	128 M	83.9 M	64.3 M	<19 M	107 M
Sulphate, acid soluble (total)	<0.02 %	TM221	0.923				0.574	
Calcium	<21 mg/kg	TM224	242000				288000	
Magnesium	<8 mg/kg	TM224	21600				9480	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243	0.0942 M				0.0639 M	

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.5	83.8	94.1	82	96.6	84.4
Acenaphthene-d10 % recovery**	%	TM218		95	81.5	87.6	87	82.8	88.7
Phenanthrene-d10 % recovery**	%	TM218		92.6	89.8	90.2	91.4	85.9	92.3
Chrysene-d12 % recovery**	%	TM218		77.7	92.5	87.7	97.1	86.3	96.9
Perylene-d12 % recovery**	%	TM218		70.4	83.3	86.1	89.3	82.1	88.6
Naphthalene	<0.009 mg/kg	TM218		0.556 M	0.29 M	0.0259 M	0.0326 M	0.0513 M	0.193 M
Acenaphthylene	<0.012 mg/kg	TM218		0.206 M	0.184 M	<0.012 M	<0.012 M	<0.012 M	0.0176 M
Acenaphthene	<0.008 mg/kg	TM218		0.0245 M	<0.04 M	<0.008 M	0.0213 M	0.0254 M	0.0491 M
Fluorene	<0.01 mg/kg	TM218		0.193 M	0.252 M	<0.01 M	0.013 M	0.0117 M	0.0327 M
Phenanthrene	<0.015 mg/kg	TM218		1.33 M	2.83 M	0.0333 M	0.291 M	0.431 M	0.955 M
Anthracene	<0.016 mg/kg	TM218		0.478 M	0.59 M	<0.016 M	0.0537 M	0.0686 M	0.12 M
Fluoranthene	<0.017 mg/kg	TM218		2.16 M	3.38 M	0.0686 M	0.752 M	1.11 M	1.33 M
Pyrene	<0.015 mg/kg	TM218		1.68 M	2.27 M	0.0474 M	0.689 M	0.946 M	1.15 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.987 M	1.21 M	0.0255 M	0.495 M	0.629 M	0.628 M
Chrysene	<0.01 mg/kg	TM218		0.929 M	1.05 M	0.0222 M	0.605 M	0.815 M	0.611 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.36 M	1.23 M	0.0282 M	0.464 M	1.4 M	0.832 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.509 M	0.491 M	<0.014 M	0.297 M	0.524 M	0.353 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.817 M	1.04 M	0.0198 M	0.593 M	0.74 M	0.651 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.567 M	0.815 M	<0.018 M	0.513 M	0.593 M	0.634 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.124 M	0.187 M	<0.023 M	0.119 M	0.135 M	0.144 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.515 M	0.783 M	<0.024 M	0.544 M	0.627 M	0.679 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		12.4	16.6	0.271	5.48	8.1	8.38

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94	84.1	92.7	90.7	85.8	85.4
Acenaphthene-d10 % recovery**	%	TM218		95.1	97.1	86.3	86.3	92.6	91.6
Phenanthrene-d10 % recovery**	%	TM218		91	92.8	88.1	89.1	97.9	93.5
Chrysene-d12 % recovery**	%	TM218		76.6	78.2	83.5	85	96.1	97.8
Perylene-d12 % recovery**	%	TM218		86.1	71.5	81.2	85.1	83.1	85.1
Naphthalene	<0.009 mg/kg	TM218		0.47 M	1.76 M	0.0553 M	0.118 M	0.146 M	<0.045 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.112 M	<0.012 M	0.0342 M	0.0412 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		0.164 M	0.766 M	<0.008 M	0.0657 M	0.0978 M	<0.04 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.236 M	<0.01 M	0.0538 M	0.26 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		1.87 M	4.05 M	0.0446 M	0.193 M	0.769 M	0.132 M
Anthracene	<0.016 mg/kg	TM218		0.278 M	0.504 M	<0.016 M	0.0589 M	0.0823 M	<0.08 M
Fluoranthene	<0.017 mg/kg	TM218		2.78 M	3.72 M	0.0708 M	0.297 M	0.332 M	0.262 M
Pyrene	<0.015 mg/kg	TM218		2.29 M	2.9 M	0.0519 M	0.253 M	0.419 M	0.218 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.49 M	1.3 M	0.0235 M	0.113 M	0.113 M	0.114 M
Chrysene	<0.01 mg/kg	TM218		1.59 M	1.33 M	0.0277 M	0.128 M	0.15 M	0.112 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.37 M	1.16 M	0.0308 M	0.179 M	0.158 M	0.138 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.723 M	0.519 M	<0.014 M	0.0575 M	0.0609 M	<0.07 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.76 M	1.18 M	<0.015 M	0.105 M	0.1 M	0.13 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.13 M	1.04 M	<0.018 M	0.064 M	0.0931 M	0.123 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.252 M	0.206 M	<0.023 M	<0.023 M	<0.023 M	<0.115 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.25 M	0.944 M	<0.024 M	0.08 M	0.109 M	0.155 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		18.4	21.7	0.304	1.8	2.93	1.38

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646072	18646082	18646043	18646154	18646203	18646208
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85	93.9	96.3	93.1	86.4	106
Acenaphthene-d10 % recovery**	%	TM218		88.9	86.4	90.8	91.7	89.4	85.2
Phenanthrene-d10 % recovery**	%	TM218		92.3	93.4	90.4	91.5	93.9	92.8
Chrysene-d12 % recovery**	%	TM218		77.9	91.2	81.4	81.5	96.2	96.9
Perylene-d12 % recovery**	%	TM218		72.8	87.7	83.1	88.8	86.8	95.2
Naphthalene	<0.009 mg/kg	TM218		0.0114 M	0.325 M	0.415 M	0.152 M	0.083 M	0.24 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0689 M	0.145 M	0.0329 M	<0.06 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		0.0102 M	0.0384 M	0.0623 M	0.0792 M	0.0619 M	<0.04 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0199 M	0.207 M	0.0507 M	<0.05 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		0.347 M	0.168 M	1.42 M	0.873 M	0.545 M	0.943 M
Anthracene	<0.016 mg/kg	TM218		0.0753 M	0.0535 M	0.289 M	0.156 M	0.179 M	0.113 M
Fluoranthene	<0.017 mg/kg	TM218		0.74 M	0.387 M	1.73 M	2.15 M	1.86 M	2.43 M
Pyrene	<0.015 mg/kg	TM218		0.589 M	0.331 M	1.24 M	2.68 M	2.47 M	2.55 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.219 M	0.168 M	0.829 M	1.46 M	1.2 M	1.87 M
Chrysene	<0.01 mg/kg	TM218		0.259 M	0.173 M	0.681 M	1.7 M	1.17 M	1.92 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.269 M	0.227 M	1.15 M	2.44 M	1.23 M	3.36 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.137 M	0.0953 M	0.355 M	0.762 M	0.479 M	1.34 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.235 M	0.161 M	0.664 M	1.54 M	1.02 M	2.23 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.15 M	0.1 M	0.479 M	1.1 M	0.756 M	1.35 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0358 M	<0.023 M	0.134 M	0.254 M	0.143 M	0.397 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.209 M	0.107 M	0.518 M	1.15 M	0.669 M	1.61 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.29	2.42	10.3	16.6	11.9	20.4

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.4	103	91.8	84.5	84.9	97.1
Acenaphthene-d10 % recovery**	%	TM218		93.8	97.1	97.4	91.1	91.3	94.8
Phenanthrene-d10 % recovery**	%	TM218		98	99.8	101	96.1	96.5	97.7
Chrysene-d12 % recovery**	%	TM218		85.8	93.1	90.4	94.4	93.4	86.2
Perylene-d12 % recovery**	%	TM218		78.9	92.6	82.2	88.6	90.6	91.9
Naphthalene	<0.009 mg/kg	TM218		0.709 M	0.983 M	0.524 M	0.117 M	0.229 M	0.639 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0132 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0385 M	0.029 M	0.0198 M	0.0211 M	0.0137 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0189 M	0.0277 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		1.28 M	0.279 M	0.0379 M	0.111 M	0.259 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.105 M	<0.016 M	<0.016 M	0.0222 M	0.0291 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		2.71 M	0.293 M	0.0497 M	0.239 M	0.987 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		2.72 M	0.24 M	0.0442 M	0.253 M	0.987 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.33 M	0.111 M	<0.014 M	0.195 M	0.756 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		1.5 M	0.128 M	0.017 M	0.215 M	0.818 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.65 M	0.161 M	<0.015 M	0.22 M	0.944 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.79 M	0.066 M	<0.014 M	0.0965 M	0.458 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.44 M	0.0986 M	<0.015 M	0.214 M	0.921 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.13 M	0.0661 M	<0.018 M	0.2 M	0.748 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.212 M	<0.023 M	<0.023 M	0.0358 M	0.137 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.3 M	0.0748 M	<0.024 M	0.18 M	0.681 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		16.9	2.56	0.693	2.12	7.97	0.639

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		71	84	103	100	102	92
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	4.36 M	<0.2 M	<0.2 M	<0.2 M	5.18 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	0.0336	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.137	<0.02	<0.02	<0.02	0.0627
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.444	<0.02	<0.02	<0.02	0.495
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	2.04	<0.02	<0.02	<0.02	2.52
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.47	34.2	<0.1	0.617	<0.1	110
Aliphatics >C16-C21	<0.1 mg/kg	TM173		23.9	79.4	<0.1	0.203	<0.1	255
Aliphatics >C21-C35	<0.1 mg/kg	TM173		131	404	<0.1	17.4	37.1	1140
Aliphatics >C35-C44	<0.1 mg/kg	TM173		27.3	91.4	<0.1	3.88	6.78	225
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		188	609	<0.1	22.1	43.9	1730
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	0.065
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.0314	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.296	<0.02	<0.02	<0.02	0.33
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	1.36	<0.02	<0.02	<0.02	1.68
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.33	22.4	<0.1	1.04	1.65	23.5
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		15.9	213	<0.1	7.05	9.49	75.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		65.3	449	2.3	46	66.9	313
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		28.9	123	3.01	15.8	26.4	90.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		12.2	40.7	1.66	5.9	9.22	30.9
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		113	808	5.32	69.9	104	502
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		301	1420	5.32	92.1	148	2240

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		90	127	123	102	91	84
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		13.7 M	26.8 M	2.19 M	<0.2 M	4.12 M	0.292 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	0.0495	0.0219	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0616	0.198	0.0876	<0.02	0.07	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		1.14	3	0.299	<0.02	0.373	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		7.01	11.6	0.945	<0.02	2.05	0.154
Aliphatics >C12-C16	<0.1 mg/kg	TM173		177	292	<0.1	<0.1	120	7.49
Aliphatics >C16-C21	<0.1 mg/kg	TM173		210	469	2.5	<0.1	290	20.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1100	2220	21.3	<0.1	2010	275
Aliphatics >C35-C44	<0.1 mg/kg	TM173		237	472	0.638	<0.1	590	150
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		1720	3450	24.5	<0.1	3010	453
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.0358	1.73	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.398	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.758	2	0.2	<0.02	0.249	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		4.67	7.75	0.629	<0.02	1.36	0.102
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		41.6	72.4	1.08	<0.1	43	2.4
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		71.3	152	2.64	0.428	95.3	15.5
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		295	561	10.7	2.07	377	294
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		110	149	3.55	3.3	160	294
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		43.3	50.7	1.53	1.96	58.7	135
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		518	935	18	5.8	675	606
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		2250	4410	44.6	5.8	3690	1060

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646072	18646082	18646043	18646154	18646203	18646208
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		98.4	88	71	93.5	93	101
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.242 M	2.5 M	0.387 M	2.56 M	1.2 M	5.51 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	0.0187	<0.02	<0.01	<0.02	0.023
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0246	0.0518	0.045	0.0281	0.0367	0.0513
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.753	0.0364	0.0562	0.04	0.627
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.108	0.657	0.16	1.45	0.638	2.31
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.17	0.107	2.54	13.8	<0.1	1.66
Aliphatics >C16-C21	<0.1 mg/kg	TM173		20.5	11.1	11.3	31.8	25.9	3.03
Aliphatics >C21-C35	<0.1 mg/kg	TM173		133	4.58	82.3	254	118	44.4
Aliphatics >C35-C44	<0.1 mg/kg	TM173		61.7	<0.1	26.3	124	51.3	29.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		222	15.8	122	424	196	79
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	0.0504	<0.02	<0.01	<0.02	0.196
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.0259	<0.02	0.013	<0.02	0.349
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.503	0.0246	0.0378	0.0259	0.418
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0717	0.438	0.107	0.964	0.426	1.54
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3	0.472	3.68	4.93	3.43	0.565
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		29.9	8.99	11.6	30.2	25.6	12.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		165	5.72	52.9	208	111	99.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		115	<0.1	26.8	139	74.7	60.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		51.1	<0.1	11	55.6	32	25.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		313	15.2	95	382	215	174
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		535	33.5	218	809	412	258

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		101	106	101	103	104	97.5
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		6.41 M	1.98 M	2.69 M	<0.1 M	0.947 M	2.39 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0283	0.0143	0.0494	<0.01	<0.02	0.0201
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0523	0.0445	0.0806	<0.01	0.0304	0.0884
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.384	0.159	0.209	<0.01	0.0933	0.423
Aliphatics >C10-C12	<0.01 mg/kg	TM089		3.28	0.984	1.28	<0.01	0.405	0.945
Aliphatics >C12-C16	<0.1 mg/kg	TM173		12.9	23.6	<0.1	<0.1	1.14	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		36.3	27.9	<0.1	1.06	0.612	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		173	5.03	<0.1	46	13.9	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		92.2	<0.1	<0.1	7.73	4.65	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		314	56.5	<0.1	54.8	20.3	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.0871	<0.01	0.0702	<0.01	0.0252	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.142	<0.01	<0.02	<0.01	0.0566	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.256	0.105	0.14	<0.01	0.0618	0.283
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		2.18	0.657	0.853	<0.01	0.269	0.63
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.23	9.37	<0.1	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		24.4	17.5	<0.1	6.22	3.41	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		145	8.02	<0.1	29.3	22.5	1.47
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		103	<0.1	<0.1	14	13.7	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		44.1	0.197	<0.1	5.25	6.11	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		275	34.9	<0.1	49.6	39.7	1.47
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		596	93.3	2.68	104	60.9	3.86

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	105	106	104	80	104
Toluene-d8**	%	TM116		92.8	97.8	101	101	95.9	94.8
4-Bromofluorobenzene**	%	TM116		75.8	93.1	100	94	95	92.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.691 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	104	108	109	110	117
Toluene-d8**	%	TM116		97.3	91.3	101	97.2	94.5	90.1
4-Bromofluorobenzene**	%	TM116		93.5	86.4	100	95.7	86.6	82.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	0.869 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	0.193 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	0.16 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	0.119 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.229 M	0.835 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	1.34	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646072	18646082	18646043	18646154	18646203	18646208
			AGS Reference						
Dibromofluoromethane**	%	TM116		91.3	105	102	116	105	99.1
Toluene-d8**	%	TM116		93.1	96.6	96.7	84.3	99	95.8
4-Bromofluorobenzene**	%	TM116		96	94.7	82.4	71.6	93.7	94.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	0.0991 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	0.101 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	0.189 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	1.25 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	111	107	106	107	107
Toluene-d8**	%	TM116		98.9	95.2	97.2	97.3	101	97
4-Bromofluorobenzene**	%	TM116		95.9	94.1	94.9	98.2	99.2	95.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	0.171 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		0.077 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.706 M	0.402 M	<0.13 M	<0.13 M	1.64 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-A8 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 17:52:01 181101-44 18646160 TM048	09/11/2018	Marcin Magdziarek	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B8 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 17:55:55 181101-44 18646172 TM048	09/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:23:15 181101-44 18646104 TM048	06/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B9 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 12:27:38 181101-44 18646112 TM048	09/11/2018	Renata Bozhkov	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 02/11/2018 06:19:21 181101-44 18646094 TM048	13/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:05:06 181101-44 18646061 TM048	09/11/2018	Barbara Urbanek-Walsh	Fibre bundles in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Client Reference:** **Report Number:** 481388
Location: Llanwern **Order Number:** LLA503 **Superseded Report:** 481387

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E8 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:18:55 181101-44 18646043 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:54:55 181101-44 18646203 TM048	09/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E9 1.50 - 1.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:51:25 181101-44 18646213 TM048	09/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-F9A 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 12:00:28 181101-44 18646235 TM048	09/11/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-A8 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 17:53:28 181101-44 18646160 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B9 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 12:28:49 181101-44 18646112 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:06:06 181101-44 18646061 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646043
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00199	<0.0005	0.0199	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00185	<0.0003	0.0185	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00147	<0.001	0.0147	<0.01	-	-	-
Vanadium	0.0968	<0.001	0.968	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	235.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646043
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	235.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646061
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0116	<0.001	0.116	<0.01	-	-	-
Copper	0.00365	<0.0003	0.0365	<0.003	-	-	-
Lead	0.000615	<0.0002	0.00615	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000565	<0.0004	0.00565	<0.004	-	-	-
Selenium	0.00177	<0.001	0.0177	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00496	<0.001	0.0496	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000204	<0.00001	0.00204	<0.0001	-	-	-
Acenaphthene by GCMS	0.000103	<0.000005	0.00103	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00105	<0.000005	0.0105	<0.00005	-	-	-
Anthracene by GCMS	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Phenanthrene by GCMS	0.00161	<0.000005	0.0161	<0.00005	-	-	-
Fluorene by GCMS	0.0000233	<0.000005	0.000233	<0.00005	-	-	-
Chrysene by GCMS	0.0000465	<0.000005	0.000465	<0.00005	-	-	-
Pyrene by GCMS	0.000621	<0.000005	0.00621	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000287	<0.000005	0.000287	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000154	<0.000005	0.000154	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00383	<0.000082	0.0383	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.82
Conductivity (µS/cm)	273.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646061
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.82
Conductivity (µS/cm)	273.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646072
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000132	<0.00001	0.000132	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00567	<0.001	0.0567	<0.01	-	-	-
Vanadium	0.082	<0.001	0.82	<0.01	-	-	-
Zinc	0.00186	<0.001	0.0186	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	9.92
Conductivity (µS/cm)	449.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646072
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	9.92
Conductivity (µS/cm)	449.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646094
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-C9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00252	<0.0005	0.0252	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00507	<0.0003	0.0507	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000479	<0.0004	0.00479	<0.004	-	-	-
Selenium	0.00554	<0.001	0.0554	<0.01	-	-	-
Vanadium	0.103	<0.001	1.03	<0.01	-	-	-
Zinc	0.00105	<0.001	0.0105	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000565	<0.0001	0.00565	<0.001	-	-	-
Acenaphthene by GCMS	0.000302	<0.00005	0.00302	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0000803	<0.00005	0.000803	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.00058	<0.00005	0.0058	<0.0005	-	-	-
Fluorene by GCMS	0.000553	<0.00005	0.00553	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.0000757	<0.00005	0.000757	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00216	<0.00082	0.0216	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	254.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646094
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-C9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.034	<0.01	0.34	<0.1	-	-	-
Aromatics >EC16-EC21	0.02	<0.01	0.2	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.054	<0.01	0.54	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.087	<0.01	0.87	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	254.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646104
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00306	<0.0003	0.0306	<0.003	-	-	-
Lead	0.0283	<0.0002	0.283	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000445	<0.0004	0.00445	<0.004	-	-	-
Selenium	0.00112	<0.001	0.0112	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0131	<0.001	0.131	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0006	<0.0001	0.006	<0.001	-	-	-
Acenaphthene by GCMS	0.000177	<0.00005	0.00177	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000206	<0.00005	0.00206	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.000983	<0.00082	0.00983	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.123	<0.05	1.23	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.04
Conductivity (µS/cm)	701.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646104
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.012	<0.01	0.12	<0.1	-	-	-
Aliphatics >C10-C12	0.054	<0.01	0.54	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.036	<0.01	0.36	<0.1	-	-	-
Aromatics >EC12-EC16	0.047	<0.01	0.47	<0.1	-	-	-
Aromatics >EC16-EC21	0.032	<0.01	0.32	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.079	<0.01	0.79	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.201	<0.01	2.01	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.04
Conductivity (µS/cm)	701.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646112
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00162	<0.001	0.0162	<0.01	-	-	-
Copper	0.00683	<0.0003	0.0683	<0.003	-	-	-
Lead	0.0164	<0.0002	0.164	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00253	<0.0004	0.0253	<0.004	-	-	-
Selenium	0.00139	<0.001	0.0139	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.023	<0.001	0.23	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00045	<0.0001	0.0045	<0.001	-	-	-
Acenaphthene by GCMS	0.0000595	<0.00005	0.000595	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0000959	<0.00005	0.000959	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000287	<0.00005	0.00287	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.0000636	<0.00005	0.000636	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.000957	<0.00082	0.00957	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.074	<0.05	0.74	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.06
Conductivity (µS/cm)	706.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646112
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.031	<0.01	0.31	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.021	<0.01	0.21	<0.1	-	-	-
Aromatics >EC12-EC16	0.05	<0.01	0.5	<0.1	-	-	-
Aromatics >EC16-EC21	0.042	<0.01	0.42	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.092	<0.01	0.92	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.166	<0.01	1.66	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.06
Conductivity (µS/cm)	706.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646122
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00208	<0.001	0.0208	<0.01	-	-	-
Copper	0.00389	<0.0003	0.0389	<0.003	-	-	-
Lead	0.0578	<0.0002	0.578	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00235	<0.0004	0.0235	<0.004	-	-	-
Selenium	0.00133	<0.001	0.0133	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0137	<0.001	0.137	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00782	<0.0001	0.0782	<0.001	-	-	-
Acenaphthene by GCMS	0.00296	<0.00005	0.0296	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000707	<0.00005	0.00707	<0.0005	-	-	-
Anthracene by GCMS	0.000369	<0.00005	0.00369	<0.0005	-	-	-
Phenanthrene by GCMS	0.00314	<0.00005	0.0314	<0.0005	-	-	-
Fluorene by GCMS	0.00065	<0.00005	0.0065	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000413	<0.00005	0.00413	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0161	<0.00082	0.161	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.367	<0.05	3.67	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.012	<0.01	0.12	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	742.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646122
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.023	<0.01	0.23	<0.1	-	-	-
Aliphatics >C10-C12	0.095	<0.01	0.95	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.105	<0.01	1.05	<0.1	-	-	-
Aromatics >C7-C8	0.022	<0.01	0.22	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.042	<0.01	0.42	<0.1	-	-	-
Aromatics >EC10-EC12	0.064	<0.01	0.64	<0.1	-	-	-
Aromatics >EC12-EC16	0.055	<0.01	0.55	<0.1	-	-	-
Aromatics >EC16-EC21	0.062	<0.01	0.62	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.117	<0.01	1.17	<0.1	-	-	-
Benzene by GC	0.105	<0.007	1.05	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.484	<0.01	4.84	<0.1	-	-	-
Toluene by GC	0.022	<0.004	0.22	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.015	<0.008	0.15	<0.08	-	-	-
o Xylene by GC	0.008	<0.003	0.08	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.023	<0.011	0.23	<0.11	-	-	-
Sum of BTEX by GC	0.15	<0.028	1.5	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	742.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646138
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00191	<0.0005	0.0191	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00194	<0.0003	0.0194	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00217	<0.001	0.0217	<0.01	-	-	-
Vanadium	0.0733	<0.001	0.733	<0.01	-	-	-
Zinc	0.00145	<0.001	0.0145	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000164	<0.00005	0.00164	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000127	<0.00005	0.00127	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000155	<0.00005	0.00155	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000136	<0.00005	0.00136	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000897	<0.00005	0.000897	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000116	<0.00002	0.00116	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.81
Conductivity (µS/cm)	296.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646138
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.81
Conductivity (µS/cm)	296.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646154
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000111	<0.00001	0.000111	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00751	<0.001	0.0751	<0.01	-	-	-
Copper	0.00209	<0.0003	0.0209	<0.003	-	-	-
Lead	0.000575	<0.0002	0.00575	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00527	<0.001	0.0527	<0.01	-	-	-
Zinc	0.00183	<0.001	0.0183	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000801	<0.0001	0.00801	<0.001	-	-	-
Acenaphthene by GCMS	0.000117	<0.00005	0.00117	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0014	<0.00005	0.014	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.0016	<0.00005	0.016	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.0000544	<0.00005	0.000544	<0.0005	-	-	-
Pyrene by GCMS	0.00179	<0.00005	0.0179	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00576	<0.00082	0.0576	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.225	<0.05	2.25	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.62
Conductivity (µS/cm)	1,360.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646154
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.121	<0.01	1.21	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.081	<0.01	0.81	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.225	<0.01	2.25	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.62
Conductivity (µS/cm)	1,360.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646160
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000506	<0.0005	0.00506	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00171	<0.001	0.0171	<0.01	-	-	-
Copper	0.0179	<0.0003	0.179	<0.003	-	-	-
Lead	0.00227	<0.0002	0.0227	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0023	<0.0004	0.023	<0.004	-	-	-
Selenium	0.0018	<0.001	0.018	<0.01	-	-	-
Vanadium	0.00776	<0.001	0.0776	<0.01	-	-	-
Zinc	0.0229	<0.001	0.229	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00206	<0.0001	0.0206	<0.001	-	-	-
Acenaphthene by GCMS	0.000597	<0.00005	0.00597	<0.0005	-	-	-
Acenaphthylene by GCMS	0.0000675	<0.00005	0.000675	<0.0005	-	-	-
Fluoranthene by GCMS	0.00138	<0.00005	0.0138	<0.0005	-	-	-
Anthracene by GCMS	0.000686	<0.00005	0.00686	<0.0005	-	-	-
Phenanthrene by GCMS	0.00451	<0.00005	0.0451	<0.0005	-	-	-
Fluorene by GCMS	0.00104	<0.00005	0.0104	<0.0005	-	-	-
Chrysene by GCMS	0.000115	<0.00005	0.00115	<0.0005	-	-	-
Pyrene by GCMS	0.000863	<0.00005	0.00863	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.0000989	<0.00005	0.000989	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000106	<0.00005	0.00106	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000683	<0.00005	0.000683	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0116	<0.00082	0.116	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.72
Conductivity (µS/cm)	1,760.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646160
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.096	<0.01	0.96	<0.1	-	-	-
Aliphatics >C21-C35	0.088	<0.01	0.88	<0.1	-	-	-
Total Aliphatics >C12-C35	0.184	<0.01	1.84	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.184	<0.01	1.84	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.184	<0.01	1.84	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.72
Conductivity (µS/cm)	1,760.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646172
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0168	<0.001	0.168	<0.01	-	-	-
Copper	0.00564	<0.0003	0.0564	<0.003	-	-	-
Lead	0.00287	<0.0002	0.0287	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00863	<0.001	0.0863	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000292	<0.00005	0.00292	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000168	<0.00005	0.00168	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000274	<0.00005	0.00274	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000819	<0.00005	0.000819	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000573	<0.00005	0.000573	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.000874	<0.00082	0.00874	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	710.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646172
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	710.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646181
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0196	<0.001	0.196	<0.01	-	-	-
Copper	0.0046	<0.0003	0.046	<0.003	-	-	-
Lead	0.00342	<0.0002	0.0342	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00545	<0.001	0.0545	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000244	<0.0001	0.00244	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.00158	<0.00005	0.0158	<0.0005	-	-	-
Anthracene by GCMS	0.000102	<0.00005	0.00102	<0.0005	-	-	-
Phenanthrene by GCMS	0.00133	<0.00005	0.0133	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000138	<0.00005	0.00138	<0.0005	-	-	-
Pyrene by GCMS	0.00109	<0.00005	0.0109	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000111	<0.00005	0.00111	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000126	<0.00005	0.00126	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000709	<0.00005	0.000709	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00479	<0.00082	0.0479	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.12
Conductivity (µS/cm)	763.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646181
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.12
Conductivity (µS/cm)	763.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646203
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000115	<0.00001	0.000115	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000344	<0.0003	0.00344	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00639	<0.001	0.0639	<0.01	-	-	-
Vanadium	0.013	<0.001	0.13	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000104	<0.0001	0.00104	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000166	<0.00005	0.00166	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	314.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646203
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	314.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646208
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00439	<0.001	0.0439	<0.01	-	-	-
Copper	0.00192	<0.0003	0.0192	<0.003	-	-	-
Lead	0.000737	<0.0002	0.00737	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00124	<0.001	0.0124	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00832	<0.001	0.0832	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00079	<0.0001	0.0079	<0.001	-	-	-
Acenaphthene by GCMS	0.0000937	<0.00005	0.000937	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0024	<0.00005	0.024	<0.0005	-	-	-
Anthracene by GCMS	0.000173	<0.00005	0.00173	<0.0005	-	-	-
Phenanthrene by GCMS	0.00171	<0.00005	0.0171	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.00101	<0.00005	0.0101	<0.0005	-	-	-
Pyrene by GCMS	0.00224	<0.00005	0.0224	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000772	<0.00005	0.00772	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00122	<0.00005	0.0122	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000668	<0.00005	0.00668	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000979	<0.00002	0.00979	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000177	<0.00005	0.00177	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000703	<0.00005	0.00703	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000476	<0.00005	0.00476	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0134	<0.00082	0.134	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.19	<0.05	1.9	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.01	<0.01	0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.93
Conductivity (µS/cm)	376.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646208
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.089	<0.01	0.89	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.012	<0.01	0.12	<0.1	-	-	-
Aromatics >EC10-EC12	0.059	<0.01	0.59	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.044	<0.01	0.44	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.044	<0.01	0.44	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.234	<0.01	2.34	<0.1	-	-	-
Toluene by GC	0.005	<0.004	0.05	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.93
Conductivity (µS/cm)	376.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646213
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00397	<0.001	0.0397	<0.01	-	-	-
Copper	0.00168	<0.0003	0.0168	<0.003	-	-	-
Lead	0.000576	<0.0002	0.00576	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00116	<0.001	0.0116	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00418	<0.001	0.0418	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000217	<0.0001	0.00217	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000243	<0.00005	0.00243	<0.0005	-	-	-
Anthracene by GCMS	0.000445	<0.00005	0.00445	<0.0005	-	-	-
Phenanthrene by GCMS	0.000369	<0.00005	0.00369	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000195	<0.00005	0.00195	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00147	<0.00082	0.0147	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.227	<0.05	2.27	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	307.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646213
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.121	<0.01	1.21	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.081	<0.01	0.81	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.014	<0.01	0.14	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.014	<0.01	0.14	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.241	<0.01	2.41	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	307.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646227
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00666	<0.001	0.0666	<0.01	-	-	-
Vanadium	0.0176	<0.001	0.176	<0.01	-	-	-
Zinc	0.00225	<0.001	0.0225	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000181	<0.0001	0.00181	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000103	<0.00005	0.00103	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000117	<0.00005	0.00117	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00011	<0.00005	0.0011	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000618	<0.00005	0.000618	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.0000707	<0.00002	0.000707	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	342.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
16/11/2018 10:00:36

10:00:03 16/11/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646227
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	342.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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10:00:03 16/11/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646235
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00513	<0.001	0.0513	<0.01	-	-	-
Copper	0.00229	<0.0003	0.0229	<0.003	-	-	-
Lead	0.00104	<0.0002	0.0104	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00781	<0.001	0.0781	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000922	<0.00001	0.00922	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000356	<0.000005	0.000356	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00201	<0.000005	0.0201	<0.00005	-	-	-
Anthracene by GCMS	0.0000347	<0.000005	0.000347	<0.00005	-	-	-
Phenanthrene by GCMS	0.00094	<0.000005	0.0094	<0.00005	-	-	-
Fluorene by GCMS	0.00000809	<0.000005	0.0000809	<0.00005	-	-	-
Chrysene by GCMS	0.000201	<0.000005	0.00201	<0.00005	-	-	-
Pyrene by GCMS	0.00179	<0.000005	0.0179	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00017	<0.000005	0.0017	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000673	<0.000005	0.000673	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000204	<0.000002	0.000204	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00622	<0.000082	0.0622	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.87
Conductivity (µS/cm)	341.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646235
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	0.004	<0.004	0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.87
Conductivity (µS/cm)	341.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Test Completion Dates

Lab Sample No(s)	18646138	18646160	18646164	18646172	18646181	18646104	18646112	18646122	18646189	18646130
Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9	4E-B9	4E-B9	4E-B8V	4E-B9V
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		14-Nov-2018		15-Nov-2018		14-Nov-2018	14-Nov-2018			
Ammoniacal Nitrogen	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018		
Ammonium Soil by Titration	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Anions by Kone (soil)		15-Nov-2018		09-Nov-2018		15-Nov-2018	15-Nov-2018			
Asbestos ID in Solid Samples		09-Nov-2018		09-Nov-2018		06-Nov-2018	09-Nov-2018			
Asbestos Quantification - Full		15-Nov-2018					15-Nov-2018			
CEN 10:1 Leachate (1 Stage)	03-Nov-2018	03-Nov-2018		03-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018		
CEN Readings	10-Nov-2018	10-Nov-2018		10-Nov-2018	10-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018		
Cyanide Comp/Free/Total/Thiocyanate	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018
Dissolved Metals by ICP-MS	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018		
EPH CWG (Aliphatic) Aqueous GC (W)	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018		
EPH CWG (Aliphatic) GC (S)	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	08-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018		
EPH CWG (Aromatic) GC (S)	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	08-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018
GRO by GC-FID (S)	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (W)	10-Nov-2018	10-Nov-2018		10-Nov-2018	10-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018		
Mercury Dissolved	09-Nov-2018	09-Nov-2018		09-Nov-2018	09-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018		
Metals in solid samples by OES	15-Nov-2018	09-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	09-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018
PAH by GCMS	13-Nov-2018	09-Nov-2018	07-Nov-2018	09-Nov-2018	07-Nov-2018	09-Nov-2018	02-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018
PAH Spec MS - Aqueous (W)	12-Nov-2018	12-Nov-2018		12-Nov-2018	12-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018		
pH	12-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018
pH Value	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018		
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Sample description	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018
Total Organic Carbon	14-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Total Sulphate		14-Nov-2018		14-Nov-2018		14-Nov-2018	14-Nov-2018			
Total Sulphur		14-Nov-2018		13-Nov-2018		13-Nov-2018	14-Nov-2018			
TPH CWG (W)	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018		
TPH CWG GC (S)	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
VOC MS (S)	14-Nov-2018	13-Nov-2018	12-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	12-Nov-2018	08-Nov-2018

Lab Sample No(s)	18646094	18646061	18646072	18646082	18646043	18646154	18646203	18646208	18646213	18646197
Customer Sample Ref.	4E-C9	4E-D9	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9	4E-E9	4E-E8V
AGS Ref.										
Depth	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	14-Nov-2018	15-Nov-2018			14-Nov-2018		14-Nov-2018		15-Nov-2018	
Ammoniacal Nitrogen	13-Nov-2018	14-Nov-2018	13-Nov-2018		13-Nov-2018	14-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	
Ammonium Soil by Titration	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Anions by Kone (soil)	15-Nov-2018	15-Nov-2018			15-Nov-2018		15-Nov-2018		15-Nov-2018	
Asbestos ID in Solid Samples	13-Nov-2018	09-Nov-2018			09-Nov-2018		09-Nov-2018		09-Nov-2018	
Asbestos Quantification - Full		15-Nov-2018								
CEN 10:1 Leachate (1 Stage)	02-Nov-2018	03-Nov-2018	02-Nov-2018		03-Nov-2018	02-Nov-2018	03-Nov-2018	03-Nov-2018	02-Nov-2018	
CEN Readings	09-Nov-2018	10-Nov-2018	09-Nov-2018		09-Nov-2018	09-Nov-2018	10-Nov-2018	10-Nov-2018	09-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018
Dissolved Metals by ICP-MS	13-Nov-2018	13-Nov-2018	12-Nov-2018		13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	09-Nov-2018	14-Nov-2018	08-Nov-2018		13-Nov-2018	09-Nov-2018	13-Nov-2018	13-Nov-2018	08-Nov-2018	
EPH CWG (Aliphatic) GC (S)	05-Nov-2018	06-Nov-2018	05-Nov-2018	07-Nov-2018	07-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018	08-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	09-Nov-2018	14-Nov-2018	08-Nov-2018		13-Nov-2018	09-Nov-2018	13-Nov-2018	13-Nov-2018	08-Nov-2018	
EPH CWG (Aromatic) GC (S)	05-Nov-2018	06-Nov-2018	05-Nov-2018	07-Nov-2018	07-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018	08-Nov-2018
GRO by GC-FID (S)	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018
GRO by GC-FID (W)	08-Nov-2018	10-Nov-2018	08-Nov-2018		10-Nov-2018	08-Nov-2018	10-Nov-2018	10-Nov-2018	08-Nov-2018	
Mercury Dissolved	15-Nov-2018	15-Nov-2018	14-Nov-2018		09-Nov-2018	14-Nov-2018	09-Nov-2018	09-Nov-2018	14-Nov-2018	
Metals in solid samples by OES	15-Nov-2018	15-Nov-2018	15-Nov-2018	12-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	13-Nov-2018	15-Nov-2018	16-Nov-2018
PAH by GCMS	09-Nov-2018	09-Nov-2018	08-Nov-2018	07-Nov-2018	07-Nov-2018	02-Nov-2018	07-Nov-2018	07-Nov-2018	08-Nov-2018	07-Nov-2018
PAH Spec MS - Aqueous (W)	08-Nov-2018	14-Nov-2018	08-Nov-2018		12-Nov-2018	08-Nov-2018	12-Nov-2018	12-Nov-2018	08-Nov-2018	
pH	13-Nov-2018	12-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018
pH Value	13-Nov-2018	12-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Sample description	01-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018
Total Organic Carbon	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Total Sulphate	14-Nov-2018	14-Nov-2018			14-Nov-2018		12-Nov-2018		14-Nov-2018	
Total Sulphur	14-Nov-2018	14-Nov-2018			13-Nov-2018		13-Nov-2018		13-Nov-2018	
TPH CWG (W)	09-Nov-2018	14-Nov-2018	08-Nov-2018		13-Nov-2018	09-Nov-2018	13-Nov-2018	13-Nov-2018	08-Nov-2018	
TPH CWG GC (S)	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018
VOC MS (S)	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	08-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Lab Sample No(s)	18646221	18646227	18646235	18646052
Customer Sample Ref.	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
AGS Ref.				
Depth	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)			15-Nov-2018	
Ammoniacal Nitrogen		13-Nov-2018	14-Nov-2018	
Ammonium Soil by Titration	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Anions by Kone (soil)			15-Nov-2018	
Asbestos ID in Solid Samples			09-Nov-2018	
CEN 10:1 Leachate (1 Stage)		03-Nov-2018	03-Nov-2018	
CEN Readings		10-Nov-2018	10-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	15-Nov-2018	14-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS		13-Nov-2018	14-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)		13-Nov-2018	13-Nov-2018	
EPH CWG (Aliphatic) GC (S)	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)		13-Nov-2018	13-Nov-2018	
EPH CWG (Aromatic) GC (S)	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018
GRO by GC-FID (S)	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (W)		10-Nov-2018	10-Nov-2018	
Mercury Dissolved		09-Nov-2018	14-Nov-2018	
Metals in solid samples by OES	14-Nov-2018	15-Nov-2018	15-Nov-2018	14-Nov-2018
PAH by GCMS	08-Nov-2018	07-Nov-2018	07-Nov-2018	02-Nov-2018
PAH Spec MS - Aqueous (W)		12-Nov-2018	14-Nov-2018	
pH	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018
pH Value		13-Nov-2018	13-Nov-2018	
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Sample description	01-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018
Total Organic Carbon	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Total Sulphate			14-Nov-2018	
Total Sulphur			13-Nov-2018	
TPH CWG (W)		13-Nov-2018	13-Nov-2018	
TPH CWG GC (S)	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018
VOC MS (S)	08-Nov-2018	08-Nov-2018	09-Nov-2018	08-Nov-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
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Tel: (01244) 528700
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Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	16 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181101-44
Your Reference:	
Location:	Llanwern
Report No:	481388

This report has been revised and directly supersedes 481387 in its entirety.

We received 24 samples on Thursday November 01, 2018 and 24 of these samples were scheduled for analysis which was completed on Friday November 16, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18646138	4E-A8		0.50 - 0.50	31/10/2018
18646160	4E-A8		1.00 - 1.00	31/10/2018
18646164	4E-A8V		1.70 - 1.70	31/10/2018
18646172	4E-B8		0.50 - 0.50	31/10/2018
18646181	4E-B8		1.00 - 1.00	31/10/2018
18646104	4E-B9		0.50 - 0.50	31/10/2018
18646112	4E-B9		1.00 - 1.00	31/10/2018
18646122	4E-B9		1.50 - 1.50	31/10/2018
18646189	4E-B8V		2.60 - 2.60	31/10/2018
18646130	4E-B9V		2.20 - 2.20	31/10/2018
18646094	4E-C9		0.50 - 0.50	31/10/2018
18646061	4E-D9		0.50 - 0.50	31/10/2018
18646072	4E-D9		1.00 - 1.00	31/10/2018
18646082	4E-D9V		2.00 - 2.00	31/10/2018
18646043	4E-E8		0.50 - 0.50	31/10/2018
18646154	4E-E8		1.00 - 1.00	31/10/2018
18646203	4E-E9		0.50 - 0.50	31/10/2018
18646208	4E-E9		1.00 - 1.00	31/10/2018
18646213	4E-E9		1.50 - 1.50	31/10/2018
18646197	4E-E8V		2.00 - 2.00	31/10/2018
18646221	4E-E9V		2.10 - 2.10	31/10/2018
18646227	4E-F9A		0.50 - 0.50	31/10/2018
18646235	4E-F9A		1.00 - 1.00	31/10/2018
18646052	4E-F9AV		2.00 - 2.00	31/10/2018

Maximum Sample/Coolbox Temperature (°C) : **9.9**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																	
			18646138			18646160			18646164		18646172			18646181			18646104			18646112	
			Customer Sample Reference																	
			4E-A8			4E-A8			4E-A8V		4E-B8			4E-B8			4E-B9			4E-B9	
			AGS Reference																	
			Depth (m)			0.50 - 0.50			1.00 - 1.00		1.70 - 1.70			0.50 - 0.50			1.00 - 1.00			0.50 - 0.50	
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10						X					X						X			X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 10						X					X						X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10					X					X						X			X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 3					X															X	
CEN Readings	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 41	X	X		X	X		X			X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 24			X			X			X			X			X			X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 17	X			X						X			X			X			X	

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)			Customer Sample Reference			AGS Reference			Depth (m)			Container			Sample Type		
			18646138	18646160	18646164	18646172	18646181	18646104	18646112											
			4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9	4E-B9											
			0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00											
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 17	X			X			X			X			X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 17	X			X			X			X			X			X			X	
pH	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 17	X			X			X			X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X
Sample description	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 10					X						X						X			X
Total Sulphur	All	NDPs: 0 Tests: 10					X						X						X			X
TPH CWG (W)	All	NDPs: 0 Tests: 17	X			X			X			X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 24		X			X			X			X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 24			X			X			X			X			X			X		

18646043	4E-E8		0.50 - 0.50	250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x			x		x						x					
18646082	4E-D9V		2.00 - 2.00	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
18646072	4E-D9		1.00 - 1.00	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
				1kg TUB	S	x			x		x						x					
18646061	4E-D9		0.50 - 0.50	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x			x		x						x					
18646094	4E-C9		0.50 - 0.50	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x	x	x		x				
				1kg TUB	S	x			x		x						x					
18646130	4E-B9V		2.20 - 2.20	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
18646189	4E-B8V		2.60 - 2.60	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
18646122	4E-B9		1.50 - 1.50	60g VOC (ALE215)	S																x	
				250g Amber Jar (ALE210)	S		x	x		x		x	x	x					x			
				1kg TUB	S	x			x		x						x					
18646112	4E-B9		1.00 - 1.00	60g VOC (ALE215)	S																x	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

	Lab Sample No(s)			18646043	18646154			18646203			18646208			18646213			18646197		18646221	18646227	
	Customer Sample Reference			4E-E8	4E-E8			4E-E9			4E-E9			4E-E9			4E-E8V		4E-E9V	4E-F9A	
	AGS Reference																				
	Depth (m)			0.50 - 0.50	1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			2.00 - 2.00		2.10 - 2.10	0.50 - 0.50	
	Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
	Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 10							X						X							
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 17			X			X			X			X							X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 24				X			X			X			X		X		X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 10							X						X							
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 10						X						X								
CEN Readings	All	NDPs: 0 Tests: 17			X			X			X			X							X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 41			X	X		X	X		X	X		X	X		X		X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 17			X			X			X			X							X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17			X			X			X			X							X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 24				X			X			X			X		X		X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 17			X			X			X			X							X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 24				X			X			X			X		X		X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 24		X			X			X			X			X		X		X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 17			X			X			X			X							X	
Mercury Dissolved	All	NDPs: 0 Tests: 17			X			X			X			X							X	

18646052						
4E-F9AV						
2.00 - 2.00						
60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB	60g VOC (ALE215)	
S	S	S	S	S	S	
			X			
				X		
	X		X			
			X			
				X		
				X		
	X		X	X		
				X		
				X		
				X		
			X			
				X		
			X			
				X		
			X

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18646043	18646154			18646203			18646208			18646213			18646197		18646221		18646227
Customer Sample Reference			4E-E8	4E-E8			4E-E9			4E-E9			4E-E9			4E-E8V		4E-E9V		4E-F9A
AGS Reference																				
Depth (m)			0.50 - 0.50	1.00 - 1.00			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			2.00 - 2.00		2.10 - 2.10		0.50 - 0.50
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
PAH by GCMS	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 17		X			X			X			X							X	
pH	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
pH Value	All	NDPs: 0 Tests: 17		X			X			X			X							X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
Sample description	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
Total Organic Carbon	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
Total Sulphate	All	NDPs: 0 Tests: 10						X						X							
Total Sulphur	All	NDPs: 0 Tests: 10						X						X							
TPH CWG (W)	All	NDPs: 0 Tests: 17		X			X			X			X							X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 24			X			X			X			X		X		X			X
VOC MS (S)	All	NDPs: 0 Tests: 24	X			X			X			X			X		X		X		

18646052	4E-F9AV		2.00 - 2.00	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S		X		X			X			X		X		X				X	
18646235	4E-F9A		1.00 - 1.00	60g VOC (ALE215)	S																		X	
				250g Amber Jar (ALE210)	S		X		X			X			X		X		X		X		X	
				1kg TUB	S					X			X									X		
18646227	4E-F9A		0.50 - 0.50	60g VOC (ALE215)	S																		X	

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18646138	4E-A8	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
18646160	4E-A8	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
18646164	4E-A8V	1.70 - 1.70	Dark Brown	Silty Clay	Vegetation	None
18646172	4E-B8	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646181	4E-B8	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18646104	4E-B9	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18646112	4E-B9	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18646122	4E-B9	1.50 - 1.50	Dark Brown	Sand	Vegetation	Stones
18646189	4E-B8V	2.60 - 2.60	Dark Brown	Clay Loam	Vegetation	None
18646130	4E-B9V	2.20 - 2.20	Dark Brown	Silty Clay	Vegetation	None
18646094	4E-C9	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18646061	4E-D9	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646072	4E-D9	1.00 - 1.00	Dark Brown	Sand	Vegetation	Stones
18646082	4E-D9V	2.00 - 2.00	Dark Brown	Silty Clay	Vegetation	None
18646043	4E-E8	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646154	4E-E8	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18646203	4E-E9	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646208	4E-E9	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18646213	4E-E9	1.50 - 1.50	Dark Brown	Sandy Loam	Vegetation	Stones
18646197	4E-E8V	2.00 - 2.00	Dark Brown	Silty Clay	Vegetation	None
18646221	4E-E9V	2.10 - 2.10	Grey	Clay	Vegetation	Stones
18646227	4E-F9A	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18646235	4E-F9A	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
18646052	4E-F9AV	2.00 - 2.00	Dark Brown	Loamy Sand	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.5	7.7	23	4.2	6.8	10
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	76.4 M	117 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0325 M	<0.01 M	0.0104 M	0.0107 M	0.0336 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0217 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0217 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	0.0759 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.559		0.186		0.409
Sulphate, Total potential	<0.06 %	TM132			1.68		0.558		1.23
Soil Organic Matter (SOM)	<0.35 %	TM132		51.4 #	4.91 #	0.905 #	1.68 #	1.7 #	8.29 #
pH	1 pH Units	TM133		10.8 M	12.5 M	8.14 M	12.8 M	12.8 M	12.8 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		<6 M	5.52 M	18.9 M	<6 M	8.97 M	7.07 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	0.3 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		<9 M	115 M	27 M	987 M	825 M	220 M
Copper	<1.4 mg/kg	TM181		<14 M	11.1 M	12.1 M	16.2 M	33.4 M	19.4 M
Iron	<1000 mg/kg	TM181		133000 #	66500 #	38900 #	172000 #	194000 #	123000 #
Lead	<0.7 mg/kg	TM181		41.9 M	48.9 M	28.8 M	16.5 M	11.1 M	48.8 M
Manganese	<0.13 mg/kg	TM181		2070 M	13100 M	1750 M	31900 M	33200 M	19000 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		37.5 M	7.78 M	42.1 M	8.78 M	21.7 M	21.9 M
Selenium	<1 mg/kg	TM181		<10 #	6.07 #	<1 #	21.1 #	17.1 #	12.3 #
Vanadium	<0.2 mg/kg	TM181		163 #	117 #	54.2 #	499 #	456 #	269 #
Zinc	<1.9 mg/kg	TM181		145 M	201 M	116 M	55.3 M	75.5 M	113 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.533		0.315		1.01
Calcium	<21 mg/kg	TM224			191000		271000		223000
Magnesium	<8 mg/kg	TM224			16600		7450		9730
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.178 M		<0.004 M		0.442 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #				
Additional Asbestos Components (Using TM048)		TM304			None #				
Analysts Comments		TM304			N/A				
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #				

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	13	32	24	5.7	8.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	65.2 M	193 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0112 M	0.0115 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0115 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.834				0.289	0.852
Sulphate, Total potential	<0.06 %	TM132		2.5				0.867	2.56
Soil Organic Matter (SOM)	<0.35 %	TM132		5.28 #	17.6 #	1.3 #	1.91 #	4.84 #	4.05 #
pH	1 pH Units	TM133		12.6 M	12.8 M	8.12 M	8.02 M	11.2 M	9.94 M
Cyanide, Total	<1 mg/kg	TM153		15.1 M	<1 M	<1 M	1.58 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.42 M	8.69 M	24 M	17.1 M	10.5 M	3.68 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	0.238 M	<0.02 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		255 M	150 M	30.1 M	36.6 M	76.4 M	53.4 M
Copper	<1.4 mg/kg	TM181		23.5 M	37 M	11.1 M	12.9 M	34.6 M	2.48 M
Iron	<1000 mg/kg	TM181		118000 #	135000 #	42000 #	35000 #	198000 #	36000 #
Lead	<0.7 mg/kg	TM181		48.7 M	75.1 M	30.8 M	29.8 M	77.3 M	11.5 M
Manganese	<0.13 mg/kg	TM181		21800 M	15900 M	397 M	367 M	11200 M	12000 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		25.6 M	26.5 M	39.1 M	39.9 M	39.8 M	4.31 M
Selenium	<1 mg/kg	TM181		<10 #	<10 #	<1 #	<1 #	<10 #	5.93 #
Vanadium	<0.2 mg/kg	TM181		258 #	200 #	64.2 #	60.6 #	113 #	115 #
Zinc	<1.9 mg/kg	TM181		169 M	188 M	137 M	123 M	238 M	58.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		1.27				0.325	0.868
Calcium	<21 mg/kg	TM224		196000				133000	203000
Magnesium	<8 mg/kg	TM224		16400				24000	33500
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.604 M				0.0794 M	0.79 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					<0.001 #
Additional Asbestos Components (Using TM048)		TM304		None #					None #
Analysts Comments		TM304		N/A					N/A
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			4E-D9	1.00 - 1.00	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646072	
			4E-D9V	2.00 - 2.00	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646082	
			4E-E8	0.50 - 0.50	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646043	
			4E-E8	1.00 - 1.00	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646154	
			4E-E9	0.50 - 0.50	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646203	
			4E-E9	1.00 - 1.00	Soil/Solid (S)	31/10/2018	00:00	01/11/2018	181101-44	18646208	
Moisture Content Ratio (% of as received sample)	%	PM024	11	31	6.6	7.5	7.4	4.5			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	171 M	<12 M	<12 M	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)	0.0112 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M			
Sulphur, Total	<0.02 %	TM132			0.115		0.671				
Sulphate, Total potential	<0.06 %	TM132			0.345		2.01				
Soil Organic Matter (SOM)	<0.35 %	TM132	1.23 #	3.29 #	3.93 #	1.49 #	4.88 #	0.803 #			
pH	1 pH Units	TM133	12.7 M	8.04 M	10.6 M	11.1 M	11 M	12.6 M			
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M	<1 M	<1 M			
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M	<1 M	<1 M			
Arsenic	<0.6 mg/kg	TM181	<6 M	13.3 M	7.54 M	16.3 M	4.66 M	<6 M			
Cadmium	<0.02 mg/kg	TM181	<0.2 M	<0.02 M	<0.2 M	<0.2 M	<0.02 M	<0.2 M			
Chromium	<0.9 mg/kg	TM181	567 M	35.7 M	46.1 M	864 M	62.5 M	677 M			
Copper	<1.4 mg/kg	TM181	15.4 M	13.7 M	16.5 M	59.4 M	8.23 M	14.3 M			
Iron	<1000 mg/kg	TM181	106000 #	27400 #	144000 #	2390000 #	64800 #	181000 #			
Lead	<0.7 mg/kg	TM181	21 M	30.5 M	69.2 M	17.1 M	22.6 M	<7 M			
Manganese	<0.13 mg/kg	TM181	37700 M	721 M	6740 M	408000 M	13500 M	43600 M			
Mercury	<0.14 mg/kg	TM181	<1.4 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M			
Nickel	<0.2 mg/kg	TM181	9.49 M	36.4 M	21.5 M	49.2 M	6.74 M	7.52 M			
Selenium	<1 mg/kg	TM181	22 #	<1 #	<10 #	35.7 #	5.56 #	25.3 #			
Vanadium	<0.2 mg/kg	TM181	397 #	58.1 #	104 #	614 #	70.3 #	486 #			
Zinc	<1.9 mg/kg	TM181	60.3 M	128 M	249 M	86.6 M	115 M	29.2 M			
Sulphate, acid soluble (total)	<0.02 %	TM221			0.255		0.589				
Calcium	<21 mg/kg	TM224			173000		193000				
Magnesium	<8 mg/kg	TM224			12900		26100				
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0641 M		0.11 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
AGS Reference						

Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	8.2	37	23	7.3	4.6	25
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	322 M	152 M	<12 M	<12 M	177 M
Phenol	<0.01 mg/kg	TM062 (S)	0.0109 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132	0.739				0.395	
Sulphate, Total potential	<0.06 %	TM132	2.22				1.19	
Soil Organic Matter (SOM)	<0.35 %	TM132	1.14 #	6 #	1.13 #	7.78 #	<0.35 #	2.78 #
pH	1 pH Units	TM133	12.3 M	8.06 M	8.14 M	10.7 M	12.3 M	7.79 M
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181	<6 M	14.9 M	17.3 M	<6 M	<6 M	13 M
Cadmium	<0.02 mg/kg	TM181	<0.2 M	<0.02 M	<0.02 M	<0.2 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181	361 M	51 M	25.6 M	106 M	734 M	37.2 M
Copper	<1.4 mg/kg	TM181	17.2 M	16.8 M	16.6 M	18.2 M	19.3 M	12.8 M
Iron	<1000 mg/kg	TM181	114000 #	33500 #	27400 #	91900 #	186000 #	38500 #
Lead	<0.7 mg/kg	TM181	14.3 M	41.7 M	22.3 M	17.3 M	<7 M	27.6 M
Manganese	<0.13 mg/kg	TM181	35500 M	1390 M	432 M	10100 M	134000 M	825 M
Mercury	<0.14 mg/kg	TM181	<1.4 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181	49.6 M	25.8 M	30.3 M	16 M	9.16 M	34.9 M
Selenium	<1 mg/kg	TM181	17.9 #	<1 #	<1 #	<10 #	26.8 #	<1 #
Vanadium	<0.2 mg/kg	TM181	348 #	66.9 #	44.2 #	99.4 #	540 #	62.6 #
Zinc	<1.9 mg/kg	TM181	54.9 M	128 M	83.9 M	64.3 M	<19 M	107 M
Sulphate, acid soluble (total)	<0.02 %	TM221	0.923				0.574	
Calcium	<21 mg/kg	TM224	242000				288000	
Magnesium	<8 mg/kg	TM224	21600				9480	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243	0.0942 M				0.0639 M	

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.5	83.8	94.1	82	96.6	84.4
Acenaphthene-d10 % recovery**	%	TM218		95	81.5	87.6	87	82.8	88.7
Phenanthrene-d10 % recovery**	%	TM218		92.6	89.8	90.2	91.4	85.9	92.3
Chrysene-d12 % recovery**	%	TM218		77.7	92.5	87.7	97.1	86.3	96.9
Perylene-d12 % recovery**	%	TM218		70.4	83.3	86.1	89.3	82.1	88.6
Naphthalene	<0.009 mg/kg	TM218		0.556 M	0.29 M	0.0259 M	0.0326 M	0.0513 M	0.193 M
Acenaphthylene	<0.012 mg/kg	TM218		0.206 M	0.184 M	<0.012 M	<0.012 M	<0.012 M	0.0176 M
Acenaphthene	<0.008 mg/kg	TM218		0.0245 M	<0.04 M	<0.008 M	0.0213 M	0.0254 M	0.0491 M
Fluorene	<0.01 mg/kg	TM218		0.193 M	0.252 M	<0.01 M	0.013 M	0.0117 M	0.0327 M
Phenanthrene	<0.015 mg/kg	TM218		1.33 M	2.83 M	0.0333 M	0.291 M	0.431 M	0.955 M
Anthracene	<0.016 mg/kg	TM218		0.478 M	0.59 M	<0.016 M	0.0537 M	0.0686 M	0.12 M
Fluoranthene	<0.017 mg/kg	TM218		2.16 M	3.38 M	0.0686 M	0.752 M	1.11 M	1.33 M
Pyrene	<0.015 mg/kg	TM218		1.68 M	2.27 M	0.0474 M	0.689 M	0.946 M	1.15 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.987 M	1.21 M	0.0255 M	0.495 M	0.629 M	0.628 M
Chrysene	<0.01 mg/kg	TM218		0.929 M	1.05 M	0.0222 M	0.605 M	0.815 M	0.611 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.36 M	1.23 M	0.0282 M	0.464 M	1.4 M	0.832 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.509 M	0.491 M	<0.014 M	0.297 M	0.524 M	0.353 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.817 M	1.04 M	0.0198 M	0.593 M	0.74 M	0.651 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.567 M	0.815 M	<0.018 M	0.513 M	0.593 M	0.634 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.124 M	0.187 M	<0.023 M	0.119 M	0.135 M	0.144 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.515 M	0.783 M	<0.024 M	0.544 M	0.627 M	0.679 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		12.4	16.6	0.271	5.48	8.1	8.38

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94	84.1	92.7	90.7	85.8	85.4
Acenaphthene-d10 % recovery**	%	TM218		95.1	97.1	86.3	86.3	92.6	91.6
Phenanthrene-d10 % recovery**	%	TM218		91	92.8	88.1	89.1	97.9	93.5
Chrysene-d12 % recovery**	%	TM218		76.6	78.2	83.5	85	96.1	97.8
Perylene-d12 % recovery**	%	TM218		86.1	71.5	81.2	85.1	83.1	85.1
Naphthalene	<0.009 mg/kg	TM218		0.47 M	1.76 M	0.0553 M	0.118 M	0.146 M	<0.045 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.112 M	<0.012 M	0.0342 M	0.0412 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		0.164 M	0.766 M	<0.008 M	0.0657 M	0.0978 M	<0.04 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.236 M	<0.01 M	0.0538 M	0.26 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		1.87 M	4.05 M	0.0446 M	0.193 M	0.769 M	0.132 M
Anthracene	<0.016 mg/kg	TM218		0.278 M	0.504 M	<0.016 M	0.0589 M	0.0823 M	<0.08 M
Fluoranthene	<0.017 mg/kg	TM218		2.78 M	3.72 M	0.0708 M	0.297 M	0.332 M	0.262 M
Pyrene	<0.015 mg/kg	TM218		2.29 M	2.9 M	0.0519 M	0.253 M	0.419 M	0.218 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.49 M	1.3 M	0.0235 M	0.113 M	0.113 M	0.114 M
Chrysene	<0.01 mg/kg	TM218		1.59 M	1.33 M	0.0277 M	0.128 M	0.15 M	0.112 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.37 M	1.16 M	0.0308 M	0.179 M	0.158 M	0.138 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.723 M	0.519 M	<0.014 M	0.0575 M	0.0609 M	<0.07 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.76 M	1.18 M	<0.015 M	0.105 M	0.1 M	0.13 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.13 M	1.04 M	<0.018 M	0.064 M	0.0931 M	0.123 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.252 M	0.206 M	<0.023 M	<0.023 M	<0.023 M	<0.115 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.25 M	0.944 M	<0.024 M	0.08 M	0.109 M	0.155 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		18.4	21.7	0.304	1.8	2.93	1.38

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646072	18646082	18646043	18646154	18646203	18646208
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		85	93.9	96.3	93.1	86.4	106
Acenaphthene-d10 % recovery**	%	TM218		88.9	86.4	90.8	91.7	89.4	85.2
Phenanthrene-d10 % recovery**	%	TM218		92.3	93.4	90.4	91.5	93.9	92.8
Chrysene-d12 % recovery**	%	TM218		77.9	91.2	81.4	81.5	96.2	96.9
Perylene-d12 % recovery**	%	TM218		72.8	87.7	83.1	88.8	86.8	95.2
Naphthalene	<0.009 mg/kg	TM218		0.0114 M	0.325 M	0.415 M	0.152 M	0.083 M	0.24 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0689 M	0.145 M	0.0329 M	<0.06 M	<0.06 M
Acenaphthene	<0.008 mg/kg	TM218		0.0102 M	0.0384 M	0.0623 M	0.0792 M	0.0619 M	<0.04 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0199 M	0.207 M	0.0507 M	<0.05 M	<0.05 M
Phenanthrene	<0.015 mg/kg	TM218		0.347 M	0.168 M	1.42 M	0.873 M	0.545 M	0.943 M
Anthracene	<0.016 mg/kg	TM218		0.0753 M	0.0535 M	0.289 M	0.156 M	0.179 M	0.113 M
Fluoranthene	<0.017 mg/kg	TM218		0.74 M	0.387 M	1.73 M	2.15 M	1.86 M	2.43 M
Pyrene	<0.015 mg/kg	TM218		0.589 M	0.331 M	1.24 M	2.68 M	2.47 M	2.55 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.219 M	0.168 M	0.829 M	1.46 M	1.2 M	1.87 M
Chrysene	<0.01 mg/kg	TM218		0.259 M	0.173 M	0.681 M	1.7 M	1.17 M	1.92 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.269 M	0.227 M	1.15 M	2.44 M	1.23 M	3.36 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.137 M	0.0953 M	0.355 M	0.762 M	0.479 M	1.34 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.235 M	0.161 M	0.664 M	1.54 M	1.02 M	2.23 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.15 M	0.1 M	0.479 M	1.1 M	0.756 M	1.35 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0358 M	<0.023 M	0.134 M	0.254 M	0.143 M	0.397 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.209 M	0.107 M	0.518 M	1.15 M	0.669 M	1.61 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.29	2.42	10.3	16.6	11.9	20.4

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.4	103	91.8	84.5	84.9	97.1
Acenaphthene-d10 % recovery**	%	TM218		93.8	97.1	97.4	91.1	91.3	94.8
Phenanthrene-d10 % recovery**	%	TM218		98	99.8	101	96.1	96.5	97.7
Chrysene-d12 % recovery**	%	TM218		85.8	93.1	90.4	94.4	93.4	86.2
Perylene-d12 % recovery**	%	TM218		78.9	92.6	82.2	88.6	90.6	91.9
Naphthalene	<0.009 mg/kg	TM218		0.709 M	0.983 M	0.524 M	0.117 M	0.229 M	0.639 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0132 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0385 M	0.029 M	0.0198 M	0.0211 M	0.0137 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0189 M	0.0277 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		1.28 M	0.279 M	0.0379 M	0.111 M	0.259 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.105 M	<0.016 M	<0.016 M	0.0222 M	0.0291 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		2.71 M	0.293 M	0.0497 M	0.239 M	0.987 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		2.72 M	0.24 M	0.0442 M	0.253 M	0.987 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.33 M	0.111 M	<0.014 M	0.195 M	0.756 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		1.5 M	0.128 M	0.017 M	0.215 M	0.818 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.65 M	0.161 M	<0.015 M	0.22 M	0.944 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.79 M	0.066 M	<0.014 M	0.0965 M	0.458 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.44 M	0.0986 M	<0.015 M	0.214 M	0.921 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.13 M	0.0661 M	<0.018 M	0.2 M	0.748 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.212 M	<0.023 M	<0.023 M	0.0358 M	0.137 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		1.3 M	0.0748 M	<0.024 M	0.18 M	0.681 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		16.9	2.56	0.693	2.12	7.97	0.639

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		71	84	103	100	102	92
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	4.36 M	<0.2 M	<0.2 M	<0.2 M	5.18 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	0.0336	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.137	<0.02	<0.02	<0.02	0.0627
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.444	<0.02	<0.02	<0.02	0.495
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	2.04	<0.02	<0.02	<0.02	2.52
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.47	34.2	<0.1	0.617	<0.1	110
Aliphatics >C16-C21	<0.1 mg/kg	TM173		23.9	79.4	<0.1	0.203	<0.1	255
Aliphatics >C21-C35	<0.1 mg/kg	TM173		131	404	<0.1	17.4	37.1	1140
Aliphatics >C35-C44	<0.1 mg/kg	TM173		27.3	91.4	<0.1	3.88	6.78	225
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		188	609	<0.1	22.1	43.9	1730
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.02	<0.02	0.065
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.0314	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.296	<0.02	<0.02	<0.02	0.33
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	1.36	<0.02	<0.02	<0.02	1.68
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.33	22.4	<0.1	1.04	1.65	23.5
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		15.9	213	<0.1	7.05	9.49	75.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		65.3	449	2.3	46	66.9	313
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		28.9	123	3.01	15.8	26.4	90.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		12.2	40.7	1.66	5.9	9.22	30.9
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		113	808	5.32	69.9	104	502
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		301	1420	5.32	92.1	148	2240

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		90	127	123	102	91	84
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		13.7 M	26.8 M	2.19 M	<0.2 M	4.12 M	0.292 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	0.0495	0.0219	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0616	0.198	0.0876	<0.02	0.07	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		1.14	3	0.299	<0.02	0.373	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		7.01	11.6	0.945	<0.02	2.05	0.154
Aliphatics >C12-C16	<0.1 mg/kg	TM173		177	292	<0.1	<0.1	120	7.49
Aliphatics >C16-C21	<0.1 mg/kg	TM173		210	469	2.5	<0.1	290	20.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		1100	2220	21.3	<0.1	2010	275
Aliphatics >C35-C44	<0.1 mg/kg	TM173		237	472	0.638	<0.1	590	150
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		1720	3450	24.5	<0.1	3010	453
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.0358	1.73	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.398	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.758	2	0.2	<0.02	0.249	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		4.67	7.75	0.629	<0.02	1.36	0.102
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		41.6	72.4	1.08	<0.1	43	2.4
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		71.3	152	2.64	0.428	95.3	15.5
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		295	561	10.7	2.07	377	294
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		110	149	3.55	3.3	160	294
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		43.3	50.7	1.53	1.96	58.7	135
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		518	935	18	5.8	675	606
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		2250	4410	44.6	5.8	3690	1060

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646072	18646082	18646043	18646154	18646203	18646208
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		98.4	88	71	93.5	93	101
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.242 M	2.5 M	0.387 M	2.56 M	1.2 M	5.51 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	0.0187	<0.02	<0.01	<0.02	0.023
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0246	0.0518	0.045	0.0281	0.0367	0.0513
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.753	0.0364	0.0562	0.04	0.627
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.108	0.657	0.16	1.45	0.638	2.31
Aliphatics >C12-C16	<0.1 mg/kg	TM173		6.17	0.107	2.54	13.8	<0.1	1.66
Aliphatics >C16-C21	<0.1 mg/kg	TM173		20.5	11.1	11.3	31.8	25.9	3.03
Aliphatics >C21-C35	<0.1 mg/kg	TM173		133	4.58	82.3	254	118	44.4
Aliphatics >C35-C44	<0.1 mg/kg	TM173		61.7	<0.1	26.3	124	51.3	29.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		222	15.8	122	424	196	79
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	0.0504	<0.02	<0.01	<0.02	0.196
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.0259	<0.02	0.013	<0.02	0.349
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.503	0.0246	0.0378	0.0259	0.418
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0717	0.438	0.107	0.964	0.426	1.54
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3	0.472	3.68	4.93	3.43	0.565
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		29.9	8.99	11.6	30.2	25.6	12.9
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		165	5.72	52.9	208	111	99.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		115	<0.1	26.8	139	74.7	60.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		51.1	<0.1	11	55.6	32	25.3
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		313	15.2	95	382	215	174
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		535	33.5	218	809	412	258

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		101	106	101	103	104	97.5
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		6.41 M	1.98 M	2.69 M	<0.1 M	0.947 M	2.39 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0283	0.0143	0.0494	<0.01	<0.02	0.0201
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0523	0.0445	0.0806	<0.01	0.0304	0.0884
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.384	0.159	0.209	<0.01	0.0933	0.423
Aliphatics >C10-C12	<0.01 mg/kg	TM089		3.28	0.984	1.28	<0.01	0.405	0.945
Aliphatics >C12-C16	<0.1 mg/kg	TM173		12.9	23.6	<0.1	<0.1	1.14	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		36.3	27.9	<0.1	1.06	0.612	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		173	5.03	<0.1	46	13.9	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		92.2	<0.1	<0.1	7.73	4.65	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		314	56.5	<0.1	54.8	20.3	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.0871	<0.01	0.0702	<0.01	0.0252	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.142	<0.01	<0.02	<0.01	0.0566	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.256	0.105	0.14	<0.01	0.0618	0.283
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		2.18	0.657	0.853	<0.01	0.269	0.63
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.23	9.37	<0.1	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		24.4	17.5	<0.1	6.22	3.41	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		145	8.02	<0.1	29.3	22.5	1.47
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		103	<0.1	<0.1	14	13.7	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		44.1	0.197	<0.1	5.25	6.11	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		275	34.9	<0.1	49.6	39.7	1.47
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		596	93.3	2.68	104	60.9	3.86

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646138	18646160	18646164	18646172	18646181	18646104
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	105	106	104	80	104
Toluene-d8**	%	TM116		92.8	97.8	101	101	95.9	94.8
4-Bromofluorobenzene**	%	TM116		75.8	93.1	100	94	95	92.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.691 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-B9	4E-B9	4E-B8V	4E-B9V	4E-C9	4E-D9
			Depth (m)	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646112	18646122	18646189	18646130	18646094	18646061
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	104	108	109	110	117
Toluene-d8**	%	TM116		97.3	91.3	101	97.2	94.5	90.1
4-Bromofluorobenzene**	%	TM116		93.5	86.4	100	95.7	86.6	82.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	0.869 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	0.193 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	0.16 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	0.119 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		0.229 M	0.835 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	1.34	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9
			Depth (m)	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646072	18646082	18646043	18646154	18646203	18646208
			AGS Reference						
Dibromofluoromethane**	%	TM116		91.3	105	102	116	105	99.1
Toluene-d8**	%	TM116		93.1	96.6	96.7	84.3	99	95.8
4-Bromofluorobenzene**	%	TM116		96	94.7	82.4	71.6	93.7	94.9
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	0.0991 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	0.101 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	0.189 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	1.25 M	<0.13 M	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E9	4E-E8V	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
			Depth (m)	1.50 - 1.50	2.00 - 2.00	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018	31/10/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			SDG Ref	181101-44	181101-44	181101-44	181101-44	181101-44	181101-44
			Lab Sample No.(s)	18646213	18646197	18646221	18646227	18646235	18646052
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	111	107	106	107	107
Toluene-d8**	%	TM116		98.9	95.2	97.2	97.3	101	97
4-Bromofluorobenzene**	%	TM116		95.9	94.1	94.9	98.2	99.2	95.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	0.171 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		0.077 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	0.706 M	0.402 M	<0.13 M	<0.13 M	1.64 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-A8 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 17:52:01 181101-44 18646160 TM048	09/11/2018	Marcin Magdziarek	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B8 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 17:55:55 181101-44 18646172 TM048	09/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:23:15 181101-44 18646104 TM048	06/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B9 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 12:27:38 181101-44 18646112 TM048	09/11/2018	Renata Bozhkov	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 02/11/2018 06:19:21 181101-44 18646094 TM048	13/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:05:06 181101-44 18646061 TM048	09/11/2018	Barbara Urbanek-Walsh	Fibre bundles in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 181101-44 **Client Reference:** **Report Number:** 481388
Location: Llanwern **Order Number:** LLA503 **Superseded Report:** 481387

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E8 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:18:55 181101-44 18646043 TM048	09/11/2018	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:54:55 181101-44 18646203 TM048	09/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E9 1.50 - 1.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:51:25 181101-44 18646213 TM048	09/11/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-F9A 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 12:00:28 181101-44 18646235 TM048	09/11/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-A8 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 17:53:28 181101-44 18646160 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B9 1.00 - 1.00 SOLID 31/10/2018 00:00:00 01/11/2018 12:28:49 181101-44 18646112 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D9 0.50 - 0.50 SOLID 31/10/2018 00:00:00 01/11/2018 12:06:06 181101-44 18646061 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646043
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00199	<0.0005	0.0199	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00185	<0.0003	0.0185	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00147	<0.001	0.0147	<0.01	-	-	-
Vanadium	0.0968	<0.001	0.968	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	235.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	7.07
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646043
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	235.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646061
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0116	<0.001	0.116	<0.01	-	-	-
Copper	0.00365	<0.0003	0.0365	<0.003	-	-	-
Lead	0.000615	<0.0002	0.00615	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000565	<0.0004	0.00565	<0.004	-	-	-
Selenium	0.00177	<0.001	0.0177	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00496	<0.001	0.0496	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000204	<0.00001	0.00204	<0.0001	-	-	-
Acenaphthene by GCMS	0.000103	<0.000005	0.00103	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00105	<0.000005	0.0105	<0.00005	-	-	-
Anthracene by GCMS	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Phenanthrene by GCMS	0.00161	<0.000005	0.0161	<0.00005	-	-	-
Fluorene by GCMS	0.0000233	<0.000005	0.000233	<0.00005	-	-	-
Chrysene by GCMS	0.0000465	<0.000005	0.000465	<0.00005	-	-	-
Pyrene by GCMS	0.000621	<0.000005	0.00621	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000287	<0.000005	0.000287	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000154	<0.000005	0.000154	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00383	<0.000082	0.0383	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.82
Conductivity (µS/cm)	273.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646061
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.82
Conductivity (µS/cm)	273.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646072
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000132	<0.00001	0.000132	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00567	<0.001	0.0567	<0.01	-	-	-
Vanadium	0.082	<0.001	0.82	<0.01	-	-	-
Zinc	0.00186	<0.001	0.0186	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	9.92
Conductivity (µS/cm)	449.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646072
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-D9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	9.92
Conductivity (µS/cm)	449.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646094
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-C9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00252	<0.0005	0.0252	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00507	<0.0003	0.0507	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000479	<0.0004	0.00479	<0.004	-	-	-
Selenium	0.00554	<0.001	0.0554	<0.01	-	-	-
Vanadium	0.103	<0.001	1.03	<0.01	-	-	-
Zinc	0.00105	<0.001	0.0105	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000565	<0.0001	0.00565	<0.001	-	-	-
Acenaphthene by GCMS	0.000302	<0.00005	0.00302	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0000803	<0.00005	0.000803	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.00058	<0.00005	0.0058	<0.0005	-	-	-
Fluorene by GCMS	0.000553	<0.00005	0.00553	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.0000757	<0.00005	0.000757	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00216	<0.00082	0.0216	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	254.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646094
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-C9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.034	<0.01	0.34	<0.1	-	-	-
Aromatics >EC16-EC21	0.02	<0.01	0.2	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.054	<0.01	0.54	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.087	<0.01	0.87	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	254.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646104
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00306	<0.0003	0.0306	<0.003	-	-	-
Lead	0.0283	<0.0002	0.283	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000445	<0.0004	0.00445	<0.004	-	-	-
Selenium	0.00112	<0.001	0.0112	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0131	<0.001	0.131	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0006	<0.0001	0.006	<0.001	-	-	-
Acenaphthene by GCMS	0.000177	<0.00005	0.00177	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000206	<0.00005	0.00206	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.000983	<0.00082	0.00983	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.123	<0.05	1.23	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.04
Conductivity (µS/cm)	701.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646104
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.012	<0.01	0.12	<0.1	-	-	-
Aliphatics >C10-C12	0.054	<0.01	0.54	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.036	<0.01	0.36	<0.1	-	-	-
Aromatics >EC12-EC16	0.047	<0.01	0.47	<0.1	-	-	-
Aromatics >EC16-EC21	0.032	<0.01	0.32	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.079	<0.01	0.79	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.201	<0.01	2.01	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.04
Conductivity (µS/cm)	701.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646112
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00162	<0.001	0.0162	<0.01	-	-	-
Copper	0.00683	<0.0003	0.0683	<0.003	-	-	-
Lead	0.0164	<0.0002	0.164	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00253	<0.0004	0.0253	<0.004	-	-	-
Selenium	0.00139	<0.001	0.0139	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.023	<0.001	0.23	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00045	<0.0001	0.0045	<0.001	-	-	-
Acenaphthene by GCMS	0.0000595	<0.00005	0.000595	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0000959	<0.00005	0.000959	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000287	<0.00005	0.00287	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.0000636	<0.00005	0.000636	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.000957	<0.00082	0.00957	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.074	<0.05	0.74	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.06
Conductivity (µS/cm)	706.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646112
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.031	<0.01	0.31	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.021	<0.01	0.21	<0.1	-	-	-
Aromatics >EC12-EC16	0.05	<0.01	0.5	<0.1	-	-	-
Aromatics >EC16-EC21	0.042	<0.01	0.42	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.092	<0.01	0.92	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.166	<0.01	1.66	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.06
Conductivity (µS/cm)	706.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646122
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00208	<0.001	0.0208	<0.01	-	-	-
Copper	0.00389	<0.0003	0.0389	<0.003	-	-	-
Lead	0.0578	<0.0002	0.578	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00235	<0.0004	0.0235	<0.004	-	-	-
Selenium	0.00133	<0.001	0.0133	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0137	<0.001	0.137	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00782	<0.0001	0.0782	<0.001	-	-	-
Acenaphthene by GCMS	0.00296	<0.00005	0.0296	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000707	<0.00005	0.00707	<0.0005	-	-	-
Anthracene by GCMS	0.000369	<0.00005	0.00369	<0.0005	-	-	-
Phenanthrene by GCMS	0.00314	<0.00005	0.0314	<0.0005	-	-	-
Fluorene by GCMS	0.00065	<0.00005	0.0065	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000413	<0.00005	0.00413	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0161	<0.00082	0.161	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.367	<0.05	3.67	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.012	<0.01	0.12	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	742.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646122
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.023	<0.01	0.23	<0.1	-	-	-
Aliphatics >C10-C12	0.095	<0.01	0.95	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.105	<0.01	1.05	<0.1	-	-	-
Aromatics >C7-C8	0.022	<0.01	0.22	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.042	<0.01	0.42	<0.1	-	-	-
Aromatics >EC10-EC12	0.064	<0.01	0.64	<0.1	-	-	-
Aromatics >EC12-EC16	0.055	<0.01	0.55	<0.1	-	-	-
Aromatics >EC16-EC21	0.062	<0.01	0.62	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.117	<0.01	1.17	<0.1	-	-	-
Benzene by GC	0.105	<0.007	1.05	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.484	<0.01	4.84	<0.1	-	-	-
Toluene by GC	0.022	<0.004	0.22	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.015	<0.008	0.15	<0.08	-	-	-
o Xylene by GC	0.008	<0.003	0.08	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.023	<0.011	0.23	<0.11	-	-	-
Sum of BTEX by GC	0.15	<0.028	1.5	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	742.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646138
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00191	<0.0005	0.0191	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00194	<0.0003	0.0194	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00217	<0.001	0.0217	<0.01	-	-	-
Vanadium	0.0733	<0.001	0.733	<0.01	-	-	-
Zinc	0.00145	<0.001	0.0145	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000164	<0.00005	0.00164	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000127	<0.00005	0.00127	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000155	<0.00005	0.00155	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000136	<0.00005	0.00136	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000897	<0.00005	0.000897	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000116	<0.00002	0.00116	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.81
Conductivity (µS/cm)	296.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646138
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.81
Conductivity (µS/cm)	296.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646154
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000111	<0.00001	0.000111	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00751	<0.001	0.0751	<0.01	-	-	-
Copper	0.00209	<0.0003	0.0209	<0.003	-	-	-
Lead	0.000575	<0.0002	0.00575	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00527	<0.001	0.0527	<0.01	-	-	-
Zinc	0.00183	<0.001	0.0183	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000801	<0.0001	0.00801	<0.001	-	-	-
Acenaphthene by GCMS	0.000117	<0.00005	0.00117	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0014	<0.00005	0.014	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.0016	<0.00005	0.016	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.0000544	<0.00005	0.000544	<0.0005	-	-	-
Pyrene by GCMS	0.00179	<0.00005	0.0179	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00576	<0.00082	0.0576	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.225	<0.05	2.25	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.62
Conductivity (µS/cm)	1,360.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646154
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.121	<0.01	1.21	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.081	<0.01	0.81	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.225	<0.01	2.25	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.62
Conductivity (µS/cm)	1,360.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646160
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000506	<0.0005	0.00506	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00171	<0.001	0.0171	<0.01	-	-	-
Copper	0.0179	<0.0003	0.179	<0.003	-	-	-
Lead	0.00227	<0.0002	0.0227	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.0023	<0.0004	0.023	<0.004	-	-	-
Selenium	0.0018	<0.001	0.018	<0.01	-	-	-
Vanadium	0.00776	<0.001	0.0776	<0.01	-	-	-
Zinc	0.0229	<0.001	0.229	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00206	<0.0001	0.0206	<0.001	-	-	-
Acenaphthene by GCMS	0.000597	<0.00005	0.00597	<0.0005	-	-	-
Acenaphthylene by GCMS	0.0000675	<0.00005	0.000675	<0.0005	-	-	-
Fluoranthene by GCMS	0.00138	<0.00005	0.0138	<0.0005	-	-	-
Anthracene by GCMS	0.000686	<0.00005	0.00686	<0.0005	-	-	-
Phenanthrene by GCMS	0.00451	<0.00005	0.0451	<0.0005	-	-	-
Fluorene by GCMS	0.00104	<0.00005	0.0104	<0.0005	-	-	-
Chrysene by GCMS	0.000115	<0.00005	0.00115	<0.0005	-	-	-
Pyrene by GCMS	0.000863	<0.00005	0.00863	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.0000989	<0.00005	0.000989	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000106	<0.00005	0.00106	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000683	<0.00005	0.000683	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0116	<0.00082	0.116	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.72
Conductivity (µS/cm)	1,760.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646160
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-A8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.096	<0.01	0.96	<0.1	-	-	-
Aliphatics >C21-C35	0.088	<0.01	0.88	<0.1	-	-	-
Total Aliphatics >C12-C35	0.184	<0.01	1.84	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.184	<0.01	1.84	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.184	<0.01	1.84	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.72
Conductivity (µS/cm)	1,760.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646172
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0168	<0.001	0.168	<0.01	-	-	-
Copper	0.00564	<0.0003	0.0564	<0.003	-	-	-
Lead	0.00287	<0.0002	0.0287	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00863	<0.001	0.0863	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000292	<0.00005	0.00292	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.000168	<0.00005	0.00168	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000274	<0.00005	0.00274	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000819	<0.00005	0.000819	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000573	<0.00005	0.000573	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.000874	<0.00082	0.00874	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	710.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646172
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.08
Conductivity (µS/cm)	710.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646181
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0196	<0.001	0.196	<0.01	-	-	-
Copper	0.0046	<0.0003	0.046	<0.003	-	-	-
Lead	0.00342	<0.0002	0.0342	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00545	<0.001	0.0545	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000244	<0.0001	0.00244	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.00158	<0.00005	0.0158	<0.0005	-	-	-
Anthracene by GCMS	0.000102	<0.00005	0.00102	<0.0005	-	-	-
Phenanthrene by GCMS	0.00133	<0.00005	0.0133	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000138	<0.00005	0.00138	<0.0005	-	-	-
Pyrene by GCMS	0.00109	<0.00005	0.0109	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000111	<0.00005	0.00111	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000126	<0.00005	0.00126	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000709	<0.00005	0.000709	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00479	<0.00082	0.0479	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.12
Conductivity (µS/cm)	763.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646181
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-B8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.12
Conductivity (µS/cm)	763.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646203
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000115	<0.00001	0.000115	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000344	<0.0003	0.00344	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00639	<0.001	0.0639	<0.01	-	-	-
Vanadium	0.013	<0.001	0.13	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000104	<0.0001	0.00104	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000166	<0.00005	0.00166	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	314.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646203
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.72
Conductivity (µS/cm)	314.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646208
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00439	<0.001	0.0439	<0.01	-	-	-
Copper	0.00192	<0.0003	0.0192	<0.003	-	-	-
Lead	0.000737	<0.0002	0.00737	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00124	<0.001	0.0124	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00832	<0.001	0.0832	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00079	<0.0001	0.0079	<0.001	-	-	-
Acenaphthene by GCMS	0.0000937	<0.00005	0.000937	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.0024	<0.00005	0.024	<0.0005	-	-	-
Anthracene by GCMS	0.000173	<0.00005	0.00173	<0.0005	-	-	-
Phenanthrene by GCMS	0.00171	<0.00005	0.0171	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.00101	<0.00005	0.0101	<0.0005	-	-	-
Pyrene by GCMS	0.00224	<0.00005	0.0224	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.000772	<0.00005	0.00772	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00122	<0.00005	0.0122	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000668	<0.00005	0.00668	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.000979	<0.00002	0.00979	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000177	<0.00005	0.00177	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	0.000703	<0.00005	0.00703	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000476	<0.00005	0.00476	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.0134	<0.00082	0.134	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.19	<0.05	1.9	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.01	<0.01	0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.93
Conductivity (µS/cm)	376.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.5
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646208
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.089	<0.01	0.89	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.012	<0.01	0.12	<0.1	-	-	-
Aromatics >EC10-EC12	0.059	<0.01	0.59	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	0.044	<0.01	0.44	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.044	<0.01	0.44	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.234	<0.01	2.34	<0.1	-	-	-
Toluene by GC	0.005	<0.004	0.05	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.93
Conductivity (µS/cm)	376.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646213
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00397	<0.001	0.0397	<0.01	-	-	-
Copper	0.00168	<0.0003	0.0168	<0.003	-	-	-
Lead	0.000576	<0.0002	0.00576	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00116	<0.001	0.0116	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00418	<0.001	0.0418	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000217	<0.0001	0.00217	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000243	<0.00005	0.00243	<0.0005	-	-	-
Anthracene by GCMS	0.000445	<0.00005	0.00445	<0.0005	-	-	-
Phenanthrene by GCMS	0.000369	<0.00005	0.00369	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000195	<0.00005	0.00195	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00147	<0.00082	0.0147	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.227	<0.05	2.27	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	307.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646213
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-E9
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.121	<0.01	1.21	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.081	<0.01	0.81	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.014	<0.01	0.14	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.014	<0.01	0.14	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.241	<0.01	2.41	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	02-Nov-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	307.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646227
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00666	<0.001	0.0666	<0.01	-	-	-
Vanadium	0.0176	<0.001	0.176	<0.01	-	-	-
Zinc	0.00225	<0.001	0.0225	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000181	<0.0001	0.00181	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000103	<0.00005	0.00103	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	0.000117	<0.00005	0.00117	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00011	<0.00005	0.0011	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000618	<0.00005	0.000618	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	0.0000707	<0.00002	0.000707	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	342.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
16/11/2018 10:00:36

10:00:03 16/11/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646227
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	342.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

10:00:03 16/11/2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646235
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00513	<0.001	0.0513	<0.01	-	-	-
Copper	0.00229	<0.0003	0.0229	<0.003	-	-	-
Lead	0.00104	<0.0002	0.0104	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00781	<0.001	0.0781	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000922	<0.00001	0.00922	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000356	<0.000005	0.000356	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00201	<0.000005	0.0201	<0.00005	-	-	-
Anthracene by GCMS	0.0000347	<0.000005	0.000347	<0.00005	-	-	-
Phenanthrene by GCMS	0.00094	<0.000005	0.0094	<0.00005	-	-	-
Fluorene by GCMS	0.00000809	<0.000005	0.0000809	<0.00005	-	-	-
Chrysene by GCMS	0.000201	<0.000005	0.00201	<0.00005	-	-	-
Pyrene by GCMS	0.00179	<0.000005	0.0179	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00017	<0.000005	0.0017	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000673	<0.000005	0.000673	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000204	<0.000002	0.000204	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00622	<0.000082	0.0622	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.87
Conductivity (µS/cm)	341.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

16/11/2018 10:00:36

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CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	4.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.4
Particle Size <4mm	>95%		

Case	
SDG	181101-44
Lab Sample Number(s)	18646235
Sampled Date	31-Oct-2018
Customer Sample Ref.	4E-F9A
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.011	<0.01	0.11	<0.1	-	-	-
Toluene by GC	0.004	<0.004	0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.87
Conductivity (µS/cm)	341.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Test Completion Dates

Lab Sample No(s)	18646138	18646160	18646164	18646172	18646181	18646104	18646112	18646122	18646189	18646130
Customer Sample Ref.	4E-A8	4E-A8	4E-A8V	4E-B8	4E-B8	4E-B9	4E-B9	4E-B9	4E-B8V	4E-B9V
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.60 - 2.60	2.20 - 2.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		14-Nov-2018		15-Nov-2018		14-Nov-2018	14-Nov-2018			
Ammoniacal Nitrogen	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018		
Ammonium Soil by Titration	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Anions by Kone (soil)		15-Nov-2018		09-Nov-2018		15-Nov-2018	15-Nov-2018			
Asbestos ID in Solid Samples		09-Nov-2018		09-Nov-2018		06-Nov-2018	09-Nov-2018			
Asbestos Quantification - Full		15-Nov-2018					15-Nov-2018			
CEN 10:1 Leachate (1 Stage)	03-Nov-2018	03-Nov-2018		03-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018		
CEN Readings	10-Nov-2018	10-Nov-2018		10-Nov-2018	10-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018		
Cyanide Comp/Free/Total/Thiocyanate	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018
Dissolved Metals by ICP-MS	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018		
EPH CWG (Aliphatic) Aqueous GC (W)	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018		
EPH CWG (Aliphatic) GC (S)	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	08-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018		
EPH CWG (Aromatic) GC (S)	06-Nov-2018	07-Nov-2018	06-Nov-2018	06-Nov-2018	08-Nov-2018	05-Nov-2018	05-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018
GRO by GC-FID (S)	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (W)	10-Nov-2018	10-Nov-2018		10-Nov-2018	10-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018		
Mercury Dissolved	09-Nov-2018	09-Nov-2018		09-Nov-2018	09-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018		
Metals in solid samples by OES	15-Nov-2018	09-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	09-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018
PAH by GCMS	13-Nov-2018	09-Nov-2018	07-Nov-2018	09-Nov-2018	07-Nov-2018	09-Nov-2018	02-Nov-2018	07-Nov-2018	07-Nov-2018	07-Nov-2018
PAH Spec MS - Aqueous (W)	12-Nov-2018	12-Nov-2018		12-Nov-2018	12-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018		
pH	12-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018
pH Value	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018		
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Sample description	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	01-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018
Total Organic Carbon	14-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Total Sulphate		14-Nov-2018		14-Nov-2018		14-Nov-2018	14-Nov-2018			
Total Sulphur		14-Nov-2018		13-Nov-2018		13-Nov-2018	14-Nov-2018			
TPH CWG (W)	13-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018		
TPH CWG GC (S)	12-Nov-2018	09-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
VOC MS (S)	14-Nov-2018	13-Nov-2018	12-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	12-Nov-2018	09-Nov-2018	12-Nov-2018	08-Nov-2018

Lab Sample No(s)	18646094	18646061	18646072	18646082	18646043	18646154	18646203	18646208	18646213	18646197
Customer Sample Ref.	4E-C9	4E-D9	4E-D9	4E-D9V	4E-E8	4E-E8	4E-E9	4E-E9	4E-E9	4E-E8V
AGS Ref.										
Depth	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	14-Nov-2018	15-Nov-2018			14-Nov-2018		14-Nov-2018		15-Nov-2018	
Ammoniacal Nitrogen	13-Nov-2018	14-Nov-2018	13-Nov-2018		13-Nov-2018	14-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	
Ammonium Soil by Titration	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Anions by Kone (soil)	15-Nov-2018	15-Nov-2018			15-Nov-2018		15-Nov-2018		15-Nov-2018	
Asbestos ID in Solid Samples	13-Nov-2018	09-Nov-2018			09-Nov-2018		09-Nov-2018		09-Nov-2018	
Asbestos Quantification - Full		15-Nov-2018								
CEN 10:1 Leachate (1 Stage)	02-Nov-2018	03-Nov-2018	02-Nov-2018		03-Nov-2018	02-Nov-2018	03-Nov-2018	03-Nov-2018	02-Nov-2018	
CEN Readings	09-Nov-2018	10-Nov-2018	09-Nov-2018		09-Nov-2018	09-Nov-2018	10-Nov-2018	10-Nov-2018	09-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018	14-Nov-2018	15-Nov-2018	14-Nov-2018
Dissolved Metals by ICP-MS	13-Nov-2018	13-Nov-2018	12-Nov-2018		13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	12-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	09-Nov-2018	14-Nov-2018	08-Nov-2018		13-Nov-2018	09-Nov-2018	13-Nov-2018	13-Nov-2018	08-Nov-2018	
EPH CWG (Aliphatic) GC (S)	05-Nov-2018	06-Nov-2018	05-Nov-2018	07-Nov-2018	07-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018	08-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	09-Nov-2018	14-Nov-2018	08-Nov-2018		13-Nov-2018	09-Nov-2018	13-Nov-2018	13-Nov-2018	08-Nov-2018	
EPH CWG (Aromatic) GC (S)	05-Nov-2018	06-Nov-2018	05-Nov-2018	07-Nov-2018	07-Nov-2018	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018	08-Nov-2018
GRO by GC-FID (S)	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018
GRO by GC-FID (W)	08-Nov-2018	10-Nov-2018	08-Nov-2018		10-Nov-2018	08-Nov-2018	10-Nov-2018	10-Nov-2018	08-Nov-2018	
Mercury Dissolved	15-Nov-2018	15-Nov-2018	14-Nov-2018		09-Nov-2018	14-Nov-2018	09-Nov-2018	09-Nov-2018	14-Nov-2018	
Metals in solid samples by OES	15-Nov-2018	15-Nov-2018	15-Nov-2018	12-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	13-Nov-2018	15-Nov-2018	16-Nov-2018
PAH by GCMS	09-Nov-2018	09-Nov-2018	08-Nov-2018	07-Nov-2018	07-Nov-2018	02-Nov-2018	07-Nov-2018	07-Nov-2018	08-Nov-2018	07-Nov-2018
PAH Spec MS - Aqueous (W)	08-Nov-2018	14-Nov-2018	08-Nov-2018		12-Nov-2018	08-Nov-2018	12-Nov-2018	12-Nov-2018	08-Nov-2018	
pH	13-Nov-2018	12-Nov-2018	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018
pH Value	13-Nov-2018	12-Nov-2018	13-Nov-2018		13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	13-Nov-2018	
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Sample description	01-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018	02-Nov-2018
Total Organic Carbon	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Total Sulphate	14-Nov-2018	14-Nov-2018			14-Nov-2018		12-Nov-2018		14-Nov-2018	
Total Sulphur	14-Nov-2018	14-Nov-2018			13-Nov-2018		13-Nov-2018		13-Nov-2018	
TPH CWG (W)	09-Nov-2018	14-Nov-2018	08-Nov-2018		13-Nov-2018	09-Nov-2018	13-Nov-2018	13-Nov-2018	08-Nov-2018	
TPH CWG GC (S)	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018
VOC MS (S)	09-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	08-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181101-44	**Client Reference:**		**Report Number:**	481388
Location:	Llanwern	**Order Number:**	LLA503	**Superseded Report:**	481387

Lab Sample No(s)	18646221	18646227	18646235	18646052
Customer Sample Ref.	4E-E9V	4E-F9A	4E-F9A	4E-F9AV
AGS Ref.				
Depth	2.10 - 2.10	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)			15-Nov-2018	
Ammoniacal Nitrogen		13-Nov-2018	14-Nov-2018	
Ammonium Soil by Titration	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Anions by Kone (soil)			15-Nov-2018	
Asbestos ID in Solid Samples			09-Nov-2018	
CEN 10:1 Leachate (1 Stage)		03-Nov-2018	03-Nov-2018	
CEN Readings		10-Nov-2018	10-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	15-Nov-2018	14-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS		13-Nov-2018	14-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)		13-Nov-2018	13-Nov-2018	
EPH CWG (Aliphatic) GC (S)	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)		13-Nov-2018	13-Nov-2018	
EPH CWG (Aromatic) GC (S)	05-Nov-2018	08-Nov-2018	06-Nov-2018	05-Nov-2018
GRO by GC-FID (S)	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (W)		10-Nov-2018	10-Nov-2018	
Mercury Dissolved		09-Nov-2018	14-Nov-2018	
Metals in solid samples by OES	14-Nov-2018	15-Nov-2018	15-Nov-2018	14-Nov-2018
PAH by GCMS	08-Nov-2018	07-Nov-2018	07-Nov-2018	02-Nov-2018
PAH Spec MS - Aqueous (W)		12-Nov-2018	14-Nov-2018	
pH	13-Nov-2018	12-Nov-2018	13-Nov-2018	13-Nov-2018
pH Value		13-Nov-2018	13-Nov-2018	
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018
Sample description	01-Nov-2018	02-Nov-2018	02-Nov-2018	01-Nov-2018
Total Organic Carbon	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
Total Sulphate			14-Nov-2018	
Total Sulphur			13-Nov-2018	
TPH CWG (W)		13-Nov-2018	13-Nov-2018	
TPH CWG GC (S)	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018
VOC MS (S)	08-Nov-2018	08-Nov-2018	09-Nov-2018	08-Nov-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	22 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181102-43
Your Reference:	
Location:	Llanwern
Report No:	482241

We received 22 samples on Friday November 02, 2018 and 22 of these samples were scheduled for analysis which was completed on Tuesday November 20, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18653991	4E-A7		0.40 - 0.40	01/11/2018
18653998	4E-A7		0.90 - 0.90	01/11/2018
18654006	4E-A7V		2.10 - 2.10	01/11/2018
18654016	4E-B7		0.50 - 0.50	01/11/2018
18654023	4E-B7V		1.60 - 1.60	01/11/2018
18654030	4E-C7		0.50 - 0.50	01/11/2018
18654036	4E-C7		1.00 - 1.00	01/11/2018
18653975	4E-C8		0.50 - 0.50	01/11/2018
18654060	4E-C8		1.00 - 1.00	01/11/2018
18654042	4E-C7V		1.80 - 1.80	01/11/2018
18654118	4E-D7		0.50 - 0.50	01/11/2018
18654083	4E-D8		0.50 - 0.50	01/11/2018
18654090	4E-D8		0.90 - 0.90	01/11/2018
18653985	4E-D7V		1.90 - 1.90	01/11/2018
18654098	4E-D8V		1.70 - 1.70	01/11/2018
18654049	4E-E1		0.50 - 0.50	01/11/2018
18654065	4E-E1		1.00 - 1.00	01/11/2018
18654071	4E-E1		2.00 - 2.00	01/11/2018
18654079	4E-E1V		2.50 - 2.50	01/11/2018
18654103	4E-F8		0.50 - 0.50	01/11/2018
18654109	4E-F8		0.90 - 0.90	01/11/2018
18654114	4E-F8V		1.50 - 1.50	01/11/2018

Maximum Sample/Coolbox Temperature (°C) : **8.4**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18653991			18653998			18654006		18654016			18654023		18654030			18654036
Customer Sample Reference			4E-A7			4E-A7			4E-A7V		4E-B7			4E-B7V		4E-C7			4E-C7
AGS Reference																			
Depth (m)			0.40 - 0.40			0.90 - 0.90			2.10 - 2.10		0.50 - 0.50			1.60 - 1.60		0.50 - 0.50			1.00 - 1.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 9					X					X					X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 15	X			X					X					X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 9					X					X					X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 9				X					X					X					
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1																			
CEN Readings	All	NDPs: 0 Tests: 15	X			X					X					X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 37	X	X		X	X		X		X	X		X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 15	X			X					X					X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 22			X			X		X			X		X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		

18654098	4E-D8V		1.70 - 1.70	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S			X					X				X			X				
18653985	4E-D7V		1.90 - 1.90	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S			X					X				X			X				
18654090	4E-D8		0.90 - 0.90	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X				
				1kg TUB	S		X			X	X	X	X	X	X			X					X	
18654083	4E-D8		0.50 - 0.50	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S			X					X				X			X				
				1kg TUB	S		X					X	X	X	X			X					X	
18654118	4E-D7		0.50 - 0.50	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X				
				1kg TUB	S		X			X		X	X	X	X			X					X	
18654042	4E-C7V		1.80 - 1.80	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S			X					X				X			X				
18654060	4E-C8		1.00 - 1.00	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S			X					X				X			X				
				1kg TUB	S		X					X	X	X	X			X					X	
18653975	4E-C8		0.50 - 0.50	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X				
				1kg TUB	S		X			X		X	X	X	X			X					X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18653991			18653998			18654006		18654016			18654023		18654030			18654036		
Customer Sample Reference			4E-A7			4E-A7			4E-A7V		4E-B7			4E-B7V		4E-C7			4E-C7		
AGS Reference																					
Depth (m)			0.40 - 0.40			0.90 - 0.90			2.10 - 2.10		0.50 - 0.50			1.60 - 1.60		0.50 - 0.50			1.00 - 1.00		
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 15	X			X					X					X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		
pH	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
pH Value	All	NDPs: 0 Tests: 15	X			X					X					X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
Sample description	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 9					X					X					X				
Total Sulphur	All	NDPs: 0 Tests: 9					X					X					X				
TPH CWG (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 22			X			X		X			X		X			X			X

18654098	4E-D8V		1.70 - 1.70	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
18653985	4E-D7V		1.90 - 1.90	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
18654090	4E-D8		0.90 - 0.90	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X	
				1kg TUB	S	X			X		X							X			
18654083	4E-D8		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
				1kg TUB	S	X			X		X							X			
18654118	4E-D7		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X	
				1kg TUB	S	X			X		X							X			
18654042	4E-C7V		1.80 - 1.80	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
18654060	4E-C8		1.00 - 1.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
				1kg TUB	S	X			X		X							X			
18653975	4E-C8		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X	
				1kg TUB	S	X			X		X							X			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			18654049	4E-E1		0.50 - 0.50	1kg TUB	S
			18654049	4E-E1		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18654049	4E-E1		0.50 - 0.50	60g VOC (ALE215)	S
			18654065	4E-E1		1.00 - 1.00	1kg TUB	S
			18654065	4E-E1		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18654065	4E-E1		1.00 - 1.00	60g VOC (ALE215)	S
			18654071	4E-E1		2.00 - 2.00	1kg TUB	S
			18654071	4E-E1		2.00 - 2.00	250g Amber Jar (ALE210)	S
			18654071	4E-E1		2.00 - 2.00	60g VOC (ALE215)	S
			18654079	4E-E1V		2.50 - 2.50	1kg TUB	S
			18654079	4E-E1V		2.50 - 2.50	60g VOC (ALE215)	S
			18654103	4E-F8		0.50 - 0.50	1kg TUB	S
			18654103	4E-F8		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18654103	4E-F8		0.50 - 0.50	60g VOC (ALE215)	S
			18654109	4E-F8		0.90 - 0.90	1kg TUB	S
			18654109	4E-F8		0.90 - 0.90	250g Amber Jar (ALE210)	S
			18654109	4E-F8		0.90 - 0.90	60g VOC (ALE215)	S
			18654114	4E-F8V		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18654114	4E-F8V		1.50 - 1.50	60g VOC (ALE215)	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 9		X				
				X				
				X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 22		X			X	
				X			X	
				X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 9		X				
				X				
				X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 9	X			X		
			X			X		
			X			X		
CEN Readings	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 37	X	X		X	X	
			X	X		X	X	
			X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 22		X			X	
				X			X	
				X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 22		X			X	
				X			X	
				X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 22			X			X
					X			X
					X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18654049			18654065			18654071			18654079		18654103			18654109			18654114	
Customer Sample Reference			4E-E1			4E-E1			4E-E1			4E-E1V		4E-F8			4E-F8			4E-F8V	
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			2.50 - 2.50		0.50 - 0.50			0.90 - 0.90			1.50 - 1.50	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 15	X			X			X					X			X				
pH	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
pH Value	All	NDPs: 0 Tests: 15	X			X			X					X			X				
Phenols by HPLC (S)	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
Sample description	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
Total Sulphate	All	NDPs: 0 Tests: 9		X						X					X						
Total Sulphur	All	NDPs: 0 Tests: 9		X						X					X						
TPH CWG (W)	All	NDPs: 0 Tests: 15	X			X			X					X			X				
TPH CWG GC (S)	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 22			X			X			X		X			X			X			X

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18653991	4E-A7	0.40 - 0.40	Dark Brown	Sandy Loam	Vegetation	Stones
18653998	4E-A7	0.90 - 0.90	Dark Brown	Stone/Soil	Stones	None
18654006	4E-A7V	2.10 - 2.10	Dark Brown	Silty Clay	Stones	Vegetation
18654016	4E-B7	0.50 - 0.50	Dark Brown	Stone/Soil	Stones	None
18654023	4E-B7V	1.60 - 1.60	Dark Brown	Silty Clay Loam	Stones	Vegetation
18654030	4E-C7	0.50 - 0.50	Dark Brown	Sand	Stones	None
18654036	4E-C7	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18653975	4E-C8	0.50 - 0.50	Black	Sand	Stones	N/A
18654060	4E-C8	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	None
18654042	4E-C7V	1.80 - 1.80	Dark Brown	Clay	Stones	None
18654118	4E-D7	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18654083	4E-D8	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
18654090	4E-D8	0.90 - 0.90	Dark Brown	Sandy Loam	Stones	None
18653985	4E-D7V	1.90 - 1.90	Dark Brown	Sandy Loam	Vegetation	Stones
18654098	4E-D8V	1.70 - 1.70	Grey	Clay	Vegetation	None
18654049	4E-E1	0.50 - 0.50	Black	Sand	Stones	Crushed Brick
18654065	4E-E1	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
18654071	4E-E1	2.00 - 2.00	Dark Brown	Stone/Soil	Stones	Vegetation
18654079	4E-E1V	2.50 - 2.50	Dark Brown	Loamy Sand	Vegetation	Stones
18654103	4E-F8	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
18654109	4E-F8	0.90 - 0.90	Dark Brown	Sand	Stones	None
18654114	4E-F8V	1.50 - 1.50	Dark Brown	Clay	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7
			Depth (m)	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18653991	18653998	18654006	18654016	18654023	18654030
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.4	14	28	7.2	24	7.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	218 M	21 #	130 M	13.6 M
Phenol	<0.01 mg/kg	TM062 (S)		0.011 M	<0.01 #	<0.01 M	0.0108 #	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	0.0139 M	<0.01 #	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.055 M	<0.015 #	<0.015 M	<0.015 #	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.066 M	<0.035 #	<0.035 M	<0.035 #	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.189		0.506		0.311
Sulphate, Total potential	<0.06 %	TM132			0.567		1.52		0.933
Soil Organic Matter (SOM)	<0.35 %	TM132		6.81 #	8.45 #	3.22 #	1.56 #	1.61 #	6.84 #
pH	1 pH Units	TM133		10.3 M	11.6 #	8.09 M	12.7 #	7.89 M	10.4 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 #	<1 M	<1 #	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 #	<1 M	<1 #	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13.6 M	<6 #	12.9 M	10.5 #	19.1 M	15.3 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 #	0.37 M	<0.2 #	0.316 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		188 M	359 #	38.2 M	775 #	40.8 M	63.2 M
Copper	<1.4 mg/kg	TM181		25.1 M	20 #	14.6 M	34.4 #	11.4 M	25.3 M
Iron	<1000 mg/kg	TM181		183000 #	134000 #	37600 #	220000 #	38200 #	174000 #
Lead	<0.7 mg/kg	TM181		86.7 M	36 #	33.3 M	31.2 #	29.4 M	116 M
Manganese	<0.13 mg/kg	TM181		11500 M	26600 #	854 M	33000 #	523 M	11400 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 #	<0.14 M	<1.4 #	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		21.6 M	14.6 #	34.2 M	26.4 #	39.3 M	31.6 M
Selenium	<1 mg/kg	TM181		<10 #	10.9 #	<1 #	22 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		276 #	419 #	64 #	591 #	66.9 #	226 #
Zinc	<1.9 mg/kg	TM181		346 M	85.9 #	115 M	97.6 #	108 M	422 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.549		0.671		0.381
Calcium	<21 mg/kg	TM224			160000		233000		143000
Magnesium	<8 mg/kg	TM224			4470		12100		12000
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.133 #		0.104 #		0.196 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C7	4E-C8	4E-C8	4E-C7V	4E-D7	4E-D8
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654036	18653975	18654060	18654042	18654118	18654083
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	7.3	13	38	15	7.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	269 M	28.2 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	0.0108 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.673			0.131	
Sulphate, Total potential	<0.06 %	TM132			2.02			0.393	
Soil Organic Matter (SOM)	<0.35 %	TM132		27.1 #	84.8 #	9.86 #	9.19 #	2.78 #	21.6 #
pH	1 pH Units	TM133		11.4 M	8.9 M	10.8 #	8.25 M	10.3 M	11.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.98 M	4.99 M	8.49 #	15.5 M	12.2 M	8.99 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	1.14 #	<0.02 M	<0.2 M	1.11 M
Chromium	<0.9 mg/kg	TM181		168 M	3.33 M	161 #	115 M	<9 M	190 M
Copper	<1.4 mg/kg	TM181		24.9 M	13.7 M	22.1 #	23.3 M	<14 M	22.3 M
Iron	<1000 mg/kg	TM181		152000 #	48100 #	88300 #	68100 #	77100 #	110000 #
Lead	<0.7 mg/kg	TM181		91.6 M	29.2 M	46 #	45.3 M	94.4 M	43.7 M
Manganese	<0.13 mg/kg	TM181		7850 M	3070 M	12700 #	6170 M	1940 M	11500 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 #	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		24.2 M	12 M	15.4 #	22.1 M	14.3 M	14.9 M
Selenium	<1 mg/kg	TM181		<10 #	2.17 #	5.34 #	2.88 #	<10 #	2.91 #
Vanadium	<0.2 mg/kg	TM181		140 #	17.7 #	177 #	108 #	43.7 #	138 #
Zinc	<1.9 mg/kg	TM181		323 M	112 M	183 #	149 M	270 M	165 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.396			0.296	
Calcium	<21 mg/kg	TM224			104000			196000	
Magnesium	<8 mg/kg	TM224			14000			16800	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0695 M			0.15 M	

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1
			Depth (m)	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654090	18653985	18654098	18654049	18654065	18654071
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5.7	31	25	12	8.9	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		19.1 M	262 M	92.4 M	<12 M	<12 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 #
Sulphur, Total	<0.02 %	TM132		0.233			0.383		0.3
Sulphate, Total potential	<0.06 %	TM132		0.699			1.15		0.9
Soil Organic Matter (SOM)	<0.35 %	TM132		12.3 #	5.07 #	1.55 #	10.7 #	19.3 #	6.6 #
pH	1 pH Units	TM133		12.4 M	7.87 M	7.99 M	9.42 M	11.2 M	11.5 #
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 #
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 #
Arsenic	<0.6 mg/kg	TM181		8.83 M	15 M	20.7 M	7.22 M	8.25 M	6.69 #
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	0.394 M	<0.02 M	0.877 M	<0.02 #
Chromium	<0.9 mg/kg	TM181		732 M	39.8 M	55.9 M	37 M	115 M	143 #
Copper	<1.4 mg/kg	TM181		36.5 M	<14 M	12.7 M	14.6 M	29.2 M	15.4 #
Iron	<1000 mg/kg	TM181		228000 #	42200 #	46000 #	41600 #	64500 #	84900 #
Lead	<0.7 mg/kg	TM181		11.4 M	39.8 M	27.7 M	29.2 M	35.4 M	26.2 #
Manganese	<0.13 mg/kg	TM181		42500 M	1300 M	1500 M	3000 M	10400 M	17100 #
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 #
Nickel	<0.2 mg/kg	TM181		26.3 M	29.4 M	38.1 M	17.1 M	16 M	10.1 #
Selenium	<1 mg/kg	TM181		18 #	<10 #	<1 #	1.44 #	4.09 #	5.45 #
Vanadium	<0.2 mg/kg	TM181		507 #	63.9 #	81 #	47 #	155 #	247 #
Zinc	<1.9 mg/kg	TM181		45.5 M	106 M	103 M	128 M	130 M	83.5 #
Sulphate, acid soluble (total)	<0.02 %	TM221		0.32			0.548		0.42
Calcium	<21 mg/kg	TM224		232000			123000		171000
Magnesium	<8 mg/kg	TM224		13700			17000		2470
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0476 M			0.137 M		0.168 #
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		N/A					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E1V	4E-F8	4E-F8	4E-F8V		
			Depth (m)	2.50 - 2.50	0.50 - 0.50	0.90 - 0.90	1.50 - 1.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018		
			SDG Ref	181102-43	181102-43	181102-43	181102-43		
			Lab Sample No.(s)	18654079	18654103	18654109	18654114		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		18	7	6.1	24		
Exchangeable Ammonia as N	<12 mg/kg	TM024		227 M	<12 M	<12 M	321 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0215 M	0.0106 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M		
Sulphur, Total	<0.02 %	TM132			0.141				
Sulphate, Total potential	<0.06 %	TM132			0.423				
Soil Organic Matter (SOM)	<0.35 %	TM132		1.81 #	0.722 #	0.76 #	1.23 #		
pH	1 pH Units	TM133		8.36 M	12.7 M	12.4 M	8 M		
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		14 M	<6 M	<6 M	13.2 M		
Cadmium	<0.02 mg/kg	TM181		0.428 M	<0.2 M	<0.2 M	<0.02 M		
Chromium	<0.9 mg/kg	TM181		34.4 M	528 M	824 M	34 M		
Copper	<1.4 mg/kg	TM181		12.1 M	18 M	14.8 M	11.3 M		
Iron	<1000 mg/kg	TM181		37200 #	150000 #	184000 #	36000 #		
Lead	<0.7 mg/kg	TM181		28.7 M	19.7 M	<7 M	28.6 M		
Manganese	<0.13 mg/kg	TM181		1600 M	26700 M	44000 M	803 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<1.4 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		35.7 M	12.8 M	4.68 M	43.7 M		
Selenium	<1 mg/kg	TM181		<1 #	20.7 #	25.1 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		59.9 #	380 #	542 #	59.5 #		
Zinc	<1.9 mg/kg	TM181		113 M	89.1 M	25.6 M	115 M		
Sulphate, acid soluble (total)	<0.02 %	TM221			0.37				
Calcium	<21 mg/kg	TM224			235000				
Magnesium	<8 mg/kg	TM224			9850				
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0212 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7
			Depth (m)	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18653991	18653998	18654006	18654016	18654023	18654030
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.2	89.5	88.4	94.5	86.9	86
Acenaphthene-d10 % recovery**	%	TM218		82.2	98.9	88.7	95.4	88.7	90.1
Phenanthrene-d10 % recovery**	%	TM218		103	104	90.8	101	90.7	98.8
Chrysene-d12 % recovery**	%	TM218		98.9	102	92.7	100	90.7	103
Perylene-d12 % recovery**	%	TM218		87.1	95.3	91	92.8	89.1	97.4
Naphthalene	<0.009 mg/kg	TM218		0.181 M	0.0312 #	<0.009 M	0.0621 #	<0.009 M	0.0956 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0927 M	<0.012 #	<0.012 M	0.0154 #	<0.012 M	0.0431 M
Acenaphthene	<0.008 mg/kg	TM218		0.00918 M	0.244 #	<0.008 M	0.0444 #	<0.008 M	0.0173 M
Fluorene	<0.01 mg/kg	TM218		0.0784 M	0.0957 #	<0.01 M	0.0211 #	<0.01 M	0.029 M
Phenanthrene	<0.015 mg/kg	TM218		0.511 M	0.583 #	<0.015 M	0.427 #	<0.015 M	0.291 M
Anthracene	<0.016 mg/kg	TM218		0.144 M	0.0602 #	<0.016 M	0.0662 #	<0.016 M	0.0747 M
Fluoranthene	<0.017 mg/kg	TM218		0.781 M	0.33 #	<0.017 M	1.24 #	<0.017 M	0.492 M
Pyrene	<0.015 mg/kg	TM218		0.798 M	0.564 #	<0.015 M	1.39 #	<0.015 M	0.388 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.315 M	0.116 #	<0.014 M	0.923 #	<0.014 M	0.247 M
Chrysene	<0.01 mg/kg	TM218		0.307 M	0.311 #	<0.01 M	1.02 #	<0.01 M	0.256 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.352 M	0.389 #	<0.015 M	1.09 #	<0.015 M	0.267 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.157 M	0.14 #	<0.014 M	0.624 #	<0.014 M	0.106 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.291 M	0.131 #	<0.015 M	1.16 #	<0.015 M	0.238 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.217 M	0.174 #	<0.018 M	0.743 #	<0.018 M	0.157 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0566 M	0.0382 #	<0.023 M	0.178 #	<0.023 M	0.0467 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.265 M	0.208 #	<0.024 M	0.895 #	<0.024 M	0.206 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		4.56	3.42	<0.118	9.91	<0.118	2.95

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C7	4E-C8	4E-C8	4E-C7V	4E-D7	4E-D8
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654036	18653975	18654060	18654042	18654118	18654083
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		0	91.4	88.1	86.9	93.6	90.5
Acenaphthene-d10 % recovery**	%	TM218		0	92	89.7	88.9	87.4	89.7
Phenanthrene-d10 % recovery**	%	TM218		88.4	93.9	99.2	89.6	86.8	89.4
Chrysene-d12 % recovery**	%	TM218		77.2	91.7	104	92.7	81.2	90.6
Perylene-d12 % recovery**	%	TM218		69.5	82.2	98.8	90.3	80.4	84.5
Naphthalene	<0.009 mg/kg	TM218		<0.009 ♦ M	0.123 M	0.0792 #	0.213 M	0.116 M	0.0666 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 ♦ M	<0.06 M	0.0439 #	<0.012 M	0.0359 M	0.0312 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 ♦ M	<0.04 M	0.0174 #	0.0216 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 ♦ M	0.0779 M	0.0192 #	<0.01 M	0.0155 M	0.0147 M
Phenanthrene	<0.015 mg/kg	TM218		0.376 ♦ M	0.79 M	0.277 #	0.0871 M	0.15 M	0.18 M
Anthracene	<0.016 mg/kg	TM218		0.0938 ♦ M	0.144 M	0.069 #	<0.016 M	0.0411 M	0.0473 M
Fluoranthene	<0.017 mg/kg	TM218		0.576 ♦ M	0.894 M	0.815 #	0.175 M	0.195 M	0.368 M
Pyrene	<0.015 mg/kg	TM218		0.43 ♦ M	0.703 M	0.806 #	0.224 M	0.171 M	0.372 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.192 ♦ M	0.381 M	0.7 #	0.142 M	0.0983 M	0.289 M
Chrysene	<0.01 mg/kg	TM218		0.574 ♦ M	0.398 M	0.699 #	0.153 M	0.11 M	0.34 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.376 ♦ M	0.545 M	0.932 #	0.155 M	0.16 M	0.64 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 ♦ M	0.174 M	0.372 #	0.0746 M	0.0491 M	0.226 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.209 ♦ M	0.288 M	0.898 #	0.154 M	0.0817 M	0.303 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.19 ♦ M	0.203 M	0.528 #	0.106 M	0.063 M	0.269 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0336 ♦ M	<0.115 M	0.153 #	<0.023 M	<0.023 M	0.0778 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.167 ♦ M	0.256 M	0.664 #	0.106 M	0.0688 M	0.32 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.22	4.98	7.07	1.61	1.35	3.54

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1
			Depth (m)	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654090	18653985	18654098	18654049	18654065	18654071
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.8	96.2	91.2	91.9	88.7	89
Acenaphthene-d10 % recovery**	%	TM218		92.5	96.1	92.9	95.3	89.8	91.4
Phenanthrene-d10 % recovery**	%	TM218		100	101	94.1	97.2	94.9	98.5
Chrysene-d12 % recovery**	%	TM218		104	98.7	97.7	88.7	92	104
Perylene-d12 % recovery**	%	TM218		99.4	91.8	97	73	89.4	99.2
Naphthalene	<0.009 mg/kg	TM218		0.0439 M	1.33 M	0.545 M	0.325 M	0.715 M	0.176 #
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	0.133 M	0.616 M	0.231 #
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0505 M	0.113 M	<0.04 M	0.0572 M	0.0312 #
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0178 M	0.0476 M	0.121 M	0.607 M	0.284 #
Phenanthrene	<0.015 mg/kg	TM218		0.183 M	0.141 M	0.513 M	1.37 M	6.7 M	2.35 #
Anthracene	<0.016 mg/kg	TM218		0.0277 M	<0.016 M	0.0289 M	0.362 M	1.59 M	0.434 #
Fluoranthene	<0.017 mg/kg	TM218		0.642 M	0.216 M	0.766 M	2.55 M	10.4 M	4.25 #
Pyrene	<0.015 mg/kg	TM218		0.689 M	0.192 M	0.664 M	1.96 M	8.01 M	2.67 #
Benz(a)anthracene	<0.014 mg/kg	TM218		0.583 M	0.103 M	0.16 M	1.15 M	4.96 M	1.78 #
Chrysene	<0.01 mg/kg	TM218		0.727 M	0.115 M	0.185 M	1.08 M	4.27 M	1.68 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.33 M	0.107 M	0.0787 M	1.2 M	5.49 M	1.91 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.451 M	0.0548 M	0.0357 M	0.553 M	1.96 M	0.685 #
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.76 M	0.103 M	0.0392 M	1 M	4.09 M	1.16 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.566 M	0.0774 M	<0.018 M	0.665 M	3.36 M	0.679 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.142 M	<0.023 M	<0.023 M	0.177 M	0.686 M	0.216 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.661 M	0.0861 M	<0.024 M	0.718 M	2.82 M	0.792 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		6.8	2.6	3.17	13.4	56.3	19.3

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E1V	4E-F8	4E-F8	4E-F8V		
			Depth (m)	2.50 - 2.50	0.50 - 0.50	0.90 - 0.90	1.50 - 1.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018		
			SDG Ref	181102-43	181102-43	181102-43	181102-43		
			Lab Sample No.(s)	18654079	18654103	18654109	18654114		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		96.8	92.4	88.6	92.9		
Acenaphthene-d10 % recovery**	%	TM218		96.2	92.8	91.2	93.2		
Phenanthrene-d10 % recovery**	%	TM218		101	99.7	99.4	98.6		
Chrysene-d12 % recovery**	%	TM218		97.9	97.2	105	94.5		
Perylene-d12 % recovery**	%	TM218		84.3	90.3	96.5	84.5		
Naphthalene	<0.009 mg/kg	TM218		0.0174 M	0.143 M	0.222 M	<0.009 M		
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0304 M	0.0185 M	<0.012 M		
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.175 M	0.104 M	<0.008 M		
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0756 M	0.0273 M	<0.01 M		
Phenanthrene	<0.015 mg/kg	TM218		0.0667 M	4.45 M	2.49 M	<0.015 M		
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.468 M	0.246 M	<0.016 M		
Fluoranthene	<0.017 mg/kg	TM218		0.107 M	7.66 M	3.69 M	<0.017 M		
Pyrene	<0.015 mg/kg	TM218		0.0834 M	7.01 M	3.28 M	<0.015 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0421 M	4.53 M	2.15 M	<0.014 M		
Chrysene	<0.01 mg/kg	TM218		0.0397 M	4.67 M	2.31 M	<0.01 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0398 M	5.95 M	3.39 M	<0.015 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	2.49 M	1.4 M	<0.014 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0319 M	5.18 M	2.24 M	<0.015 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0231 M	3.52 M	1.38 M	<0.018 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.774 M	0.366 M	<0.023 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	3.64 M	1.57 M	<0.024 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.451	50.8	24.9	<0.118		

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7
			Depth (m)	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18653991	18653998	18654006	18654016	18654023	18654030
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		76.8	103	104	98	98	75
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		22.3 M	361 #	5.4 M	0.355 #	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.2	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.172	3.32	0.0945	0.0377	<0.02	0.0314
Aliphatics >C8-C10	<0.01 mg/kg	TM089		2.5	46.7	0.62	0.0237	<0.02	0.0238
Aliphatics >C10-C12	<0.01 mg/kg	TM089		10.8	168	2.55	0.163	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		260	471	2.24	5.04	<0.1	2.48
Aliphatics >C16-C21	<0.1 mg/kg	TM173		351	579	4.26	21.3	<0.1	17
Aliphatics >C21-C35	<0.1 mg/kg	TM173		2980	2980	20.3	136	<0.1	143
Aliphatics >C35-C44	<0.1 mg/kg	TM173		513	381	5.07	39.3	<0.1	92.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		4100	4410	31.8	202	<0.1	255
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.2	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.2	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		1.67	31.1	0.413	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		7.19	112	1.7	0.109	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		77.4	177	<0.1	1.71	0.174	4.01
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		108	170	1.97	10.9	<0.1	14.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		425	561	24.3	90.5	0.286	97.9
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		86.1	178	13.3	38.7	0.525	116
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		29.5	67	5.5	13.9	0.379	55
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		696	1090	39.5	142	0.986	232
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		4820	5850	76.8	344	0.986	488

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C7	4E-C8	4E-C8	4E-C7V	4E-D7	4E-D8
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654036	18653975	18654060	18654042	18654118	18654083
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		74	46	88.8	123	115	70
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.1 #	<0.2 #	3.42 M	<0.2 M	0.529 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.0697	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.219	<0.02	0.0606
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.481	<0.02	0.0412
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	1.32	<0.02	0.231
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.39	7.26	<0.1	1.15	<0.1	2.36
Aliphatics >C16-C21	<0.1 mg/kg	TM173		21.9	42.4	0.808	3.98	9.87	10.5
Aliphatics >C21-C35	<0.1 mg/kg	TM173		80.3	241	109	17.1	158	81.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		15.3	71.6	32.6	14.9	37.1	28.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		120	362	142	37.2	205	123
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.0956	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.0308	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.321	<0.02	0.0271
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.881	<0.02	0.154
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.92	7.02	2.65	1.63	<0.1	2.16
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.06	25.1	12.2	5.65	1.25	7.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		42	144	153	55.3	17.7	51.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		17.3	82.1	94.9	10.8	1.63	36.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.23	36.3	38.8	2.82	<0.1	16.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		71.3	258	263	73.4	20.6	98
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		191	620	405	114	226	221

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1
			Depth (m)	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654090	18653985	18654098	18654049	18654065	18654071
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97	91.9	112	51.3	87	76
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		2.68 M	0.581 M	3.15 M	<0.1 #	<0.2 M	<0.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	0.0532	<0.01	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0435	0.0526	0.161	<0.01	0.0549	0.0418
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0498	0.092	0.557	<0.01	0.0373	0.0237
Aliphatics >C10-C12	<0.01 mg/kg	TM089		1.52	0.209	1.19	<0.01	0.0461	0.0203
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.84	1.31	<0.1	5.78	2.61	2.01
Aliphatics >C16-C21	<0.1 mg/kg	TM173		15.8	2.88	<0.1	23.7	39.4	12.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		79.5	14.7	2.43	94.5	77.6	45.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		27.5	1.14	<0.1	43.7	16.7	14.2
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		126	20.1	2.43	168	136	73.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	0.0213	<0.01	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.01	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0329	0.0613	0.371	<0.01	0.0253	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		1.02	0.139	0.793	<0.01	0.0307	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.92	0.53	<0.1	6.88	10.1	4.05
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.26	1.63	<0.1	28.9	114	29.6
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		71.8	16.1	4.96	133	292	93.2
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		43	3.55	5.54	79.5	84.9	29.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		18	1.16	2.43	33.5	28.5	10.2
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		126	21.8	10.5	249	501	156
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		254	42.4	16.1	417	637	230

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E1V	4E-F8	4E-F8	4E-F8V		
			Depth (m)	2.50 - 2.50	0.50 - 0.50	0.90 - 0.90	1.50 - 1.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018		
			SDG Ref	181102-43	181102-43	181102-43	181102-43		
			Lab Sample No.(s)	18654079	18654103	18654109	18654114		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		101	101	106	95		
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	1.08 M	3.4 M	1.11 M		
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0354		
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.0645	0.0596	0.128		
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.123	0.565	0.365		
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	0.421	0.965	0.199		
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.59	<0.1	2.78	<0.1		
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	5.14	9.32	<0.1		
Aliphatics >C21-C35	<0.1 mg/kg	TM173		2.43	68.4	64.4	0.225		
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	14.2	14	<0.1		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		3.02	87.8	90.5	0.225		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	0.0333	0.218	<0.02		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.0688	0.561	<0.02		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.0817	0.377	0.244		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	0.282	0.644	0.132		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	2.3	6.74	<0.1		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.299	28.9	30.6	0.5		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		5.4	153	135	4.84		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.76	56.1	55.2	3.24		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	19.2	18.8	1.07		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		7.46	240	228	8.58		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		10.5	329	322	9.91		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7
			Depth (m)	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18653991	18653998	18654006	18654016	18654023	18654030
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	105	105	106	104	101
Toluene-d8**	%	TM116		95.8	91.8	99.9	99.4	99.7	99
4-Bromofluorobenzene**	%	TM116		89.5	86.2	98.8	97.5	97.9	91.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 #	<0.1 M	<0.1 #	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 #	<0.09 M	<0.09 #	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	0.135 #	<0.07 M	<0.07 #	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	0.102 #	<0.04 M	<0.04 #	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	0.211 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	0.232 #	<0.1 M	<0.1 #	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 #	<0.13 M	<0.13 #	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	0.68	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C7	4E-C8	4E-C8	4E-C7V	4E-D7	4E-D8
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654036	18653975	18654060	18654042	18654118	18654083
			AGS Reference						
Dibromofluoromethane**	%	TM116		102	95.6	104	103	111	101
Toluene-d8**	%	TM116		98.9	95.5	98.1	98.8	98.6	98.6
4-Bromofluorobenzene**	%	TM116		92.2	79	94.1	95	91.9	90
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.01 #	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.009 #	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.007 #	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.004 #	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.01 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.01 #	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 #	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.04	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1
			Depth (m)	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654090	18653985	18654098	18654049	18654065	18654071
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	112	110	97.8	107	99.7
Toluene-d8**	%	TM116		95.6	99.3	99.9	97	96	97.9
4-Bromofluorobenzene**	%	TM116		92.6	97.5	97.9	81.6	90	87.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 #
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 #
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 #
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	1.15 M	<0.13 M	0.258 M	<0.13 #
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E1V	4E-F8	4E-F8	4E-F8V		
			Depth (m)	2.50 - 2.50	0.50 - 0.50	0.90 - 0.90	1.50 - 1.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018		
			SDG Ref	181102-43	181102-43	181102-43	181102-43		
			Lab Sample No.(s)	18654079	18654103	18654109	18654114		
			AGS Reference						
Dibromofluoromethane**	%	TM116		103	101	103	103		
Toluene-d8**	%	TM116		101	99.3	99.4	100		
4-Bromofluorobenzene**	%	TM116		98.7	96.9	99.3	99.1		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M		
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	0.121 M	<0.07 M		
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M		
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #		
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M		
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4		

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-A7 0.90 - 0.90 SOLID 01/11/2018 00:00:00 07/11/2018 07:59:42 181102-43 18653998 TM048	08/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B7 0.50 - 0.50 SOLID 01/11/2018 00:00:00 03/11/2018 10:37:54 181102-43 18654016 TM048	14/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C7 0.50 - 0.50 SOLID 01/11/2018 00:00:00 03/11/2018 10:41:52 181102-43 18654030 TM048	13/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C8 0.50 - 0.50 SOLID 01/11/2018 00:00:00 02/11/2018 17:13:18 181102-43 18653975 TM048	14/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D7 0.50 - 0.50 SOLID 01/11/2018 00:00:00 07/11/2018 07:55:52 181102-43 18654118 TM048	09/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D8 0.90 - 0.90 SOLID 01/11/2018 00:00:00 03/11/2018 07:52:58 181102-43 18654090 TM048	13/11/2018	Lucy Caroe	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181102-43 **Client Reference:** **Report Number:** 482241
Location: Llanwern **Order Number:** LLA505 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E1 0.50 - 0.50 SOLID 01/11/2018 00:00:00 02/11/2018 17:15:31 181102-43 18654049 TM048	14/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E1 2.00 - 2.00 SOLID 01/11/2018 00:00:00 03/11/2018 09:14:56 181102-43 18654071 TM048	09/11/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-F8 0.50 - 0.50 SOLID 01/11/2018 00:00:00 07/11/2018 07:53:21 181102-43 18654103 TM048	09/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D8 0.90 - 0.90 SOLID 01/11/2018 00:00:00 03/11/2018 07:52:36 181102-43 18654090 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653975
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00128	<0.0005	0.0128	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000637	<0.0003	0.00637	<0.003	-	-	-
Lead	0.000216	<0.0002	0.00216	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000721	<0.0004	0.00721	<0.004	-	-	-
Selenium	0.00139	<0.001	0.0139	<0.01	-	-	-
Vanadium	0.00756	<0.001	0.0756	<0.01	-	-	-
Zinc	0.0192	<0.001	0.192	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.244	<0.019	2.44	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000176	<0.00001	0.000176	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000931	<0.000005	0.0000931	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000691	<0.000005	0.0000691	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000237	<0.000002	0.0000237	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	9.03
Conductivity (µS/cm)	128.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653975
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	9.03
Conductivity (µS/cm)	128.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653991
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-A7
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00195	<0.0005	0.0195	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0015	<0.001	0.015	<0.01	-	-	-
Copper	0.00216	<0.0003	0.0216	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00206	<0.001	0.0206	<0.01	-	-	-
Vanadium	0.151	<0.001	1.51	<0.01	-	-	-
Zinc	0.00232	<0.001	0.0232	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00011	<0.00001	0.0011	<0.0001	-	-	-
Acenaphthene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000459	<0.000005	0.000459	<0.00005	-	-	-
Fluoranthene by GCMS	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Anthracene by GCMS	0.000038	<0.000005	0.00038	<0.00005	-	-	-
Phenanthrene by GCMS	0.000224	<0.000005	0.00224	<0.00005	-	-	-
Fluorene by GCMS	0.000248	<0.000005	0.00248	<0.00005	-	-	-
Chrysene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Pyrene by GCMS	0.000128	<0.000005	0.00128	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000931	<0.000005	0.0000931	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000129	<0.000002	0.000129	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000097	<0.000005	0.000097	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000846	<0.000005	0.0000846	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00115	<0.000082	0.0115	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.137	<0.05	1.37	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.25
Conductivity (µS/cm)	202.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653991
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-A7
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.014	<0.01	0.14	<0.1	-	-	-
Aliphatics >C10-C12	0.061	<0.01	0.61	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.041	<0.01	0.41	<0.1	-	-	-
Aromatics >EC12-EC16	0.064	<0.01	0.64	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.064	<0.01	0.64	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.202	<0.01	2.02	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.25
Conductivity (µS/cm)	202.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653998
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-A7
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.388	<0.2	3.88	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000129	<0.00001	0.000129	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00154	<0.001	0.0154	<0.01	-	-	-
Copper	0.00249	<0.0003	0.0249	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00105	<0.001	0.0105	<0.01	-	-	-
Vanadium	0.0554	<0.001	0.554	<0.01	-	-	-
Zinc	0.00498	<0.001	0.0498	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000552	<0.00001	0.00552	<0.0001	-	-	-
Acenaphthene by GCMS	0.000269	<0.000005	0.00269	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000594	<0.000005	0.000594	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000549	<0.000005	0.000549	<0.00005	-	-	-
Anthracene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Phenanthrene by GCMS	0.000492	<0.000005	0.00492	<0.00005	-	-	-
Fluorene by GCMS	0.000496	<0.000005	0.00496	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00205	<0.000082	0.0205	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	5.79	<0.05	57.9	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.066	<0.01	0.66	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.19
Conductivity (µS/cm)	625.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653998
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-A7
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.863	<0.01	8.63	<0.1	-	-	-
Aliphatics >C10-C12	2.56	<0.01	25.6	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.03	<0.01	0.3	<0.1	-	-	-
Total Aliphatics >C12-C35	0.03	<0.01	0.3	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.591	<0.01	5.91	<0.1	-	-	-
Aromatics >EC10-EC12	1.71	<0.01	17.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.093	<0.01	0.93	<0.1	-	-	-
Aromatics >EC16-EC21	0.028	<0.01	0.28	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.121	<0.01	1.21	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	5.94	<0.01	59.4	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	0.013	<0.003	0.13	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.013	<0.011	0.13	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.03	<0.01	0.3	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.19
Conductivity (µS/cm)	625.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654016
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-B7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00266	<0.0005	0.0266	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0103	<0.001	0.103	<0.01	-	-	-
Copper	0.00444	<0.0003	0.0444	<0.003	-	-	-
Lead	0.00572	<0.0002	0.0572	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000651	<0.0004	0.00651	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0109	<0.001	0.109	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000244	<0.0001	0.00244	<0.001	-	-	-
Acenaphthene by GCMS	0.000143	<0.00005	0.00143	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000561	<0.00005	0.00561	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.00064	<0.00005	0.0064	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000145	<0.00005	0.00145	<0.0005	-	-	-
Pyrene by GCMS	0.000571	<0.00005	0.00571	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.0000958	<0.00005	0.000958	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000999	<0.00005	0.000999	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000915	<0.00005	0.000915	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000682	<0.00005	0.000682	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00266	<0.00082	0.0266	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	12.18
Conductivity (µS/cm)	7,190.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654016
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-B7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	12.18
Conductivity (µS/cm)	7,190.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654030
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000416	<0.00001	0.000416	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00132	<0.0005	0.0132	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00103	<0.0003	0.0103	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00354	<0.001	0.0354	<0.01	-	-	-
Vanadium	0.231	<0.001	2.31	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	325.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654030
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	325.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654036
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0016	<0.0005	0.016	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00225	<0.001	0.0225	<0.01	-	-	-
Copper	0.0038	<0.0003	0.038	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000623	<0.0004	0.00623	<0.004	-	-	-
Selenium	0.00127	<0.001	0.0127	<0.01	-	-	-
Vanadium	0.0247	<0.001	0.247	<0.01	-	-	-
Zinc	0.00188	<0.001	0.0188	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	489.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654036
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	489.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654049
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.496	<0.2	4.96	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00608	<0.0005	0.0608	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00371	<0.0003	0.0371	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000426	<0.0004	0.00426	<0.004	-	-	-
Selenium	0.00227	<0.001	0.0227	<0.01	-	-	-
Vanadium	0.0478	<0.001	0.478	<0.01	-	-	-
Zinc	0.00292	<0.001	0.0292	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000155	<0.00001	0.000155	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000749	<0.000005	0.0000749	<0.00005	-	-	-
Fluoranthene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Anthracene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000657	<0.000005	0.000657	<0.00005	-	-	-
Fluorene by GCMS	0.00000704	<0.000005	0.0000704	<0.00005	-	-	-
Chrysene by GCMS	0.0000732	<0.000005	0.000732	<0.00005	-	-	-
Pyrene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000044	<0.000005	0.00044	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000119	<0.000005	0.00119	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000556	<0.000005	0.000556	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000613	<0.000002	0.000613	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000519	<0.000005	0.000519	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000489	<0.000005	0.000489	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000811	<0.000082	0.00811	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	8.54
Conductivity (µS/cm)	194.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654049
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.014	<0.01	0.14	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	0.014	<0.01	0.14	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.014	<0.01	0.14	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.014	<0.01	0.14	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	8.54
Conductivity (µS/cm)	194.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654060
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000607	<0.0005	0.00607	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000595	<0.0003	0.00595	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00305	<0.001	0.0305	<0.01	-	-	-
Vanadium	0.104	<0.001	1.04	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000213	<0.00001	0.000213	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000779	<0.000005	0.0000779	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000206	<0.000005	0.000206	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.10
Conductivity (µS/cm)	372.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654060
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.10
Conductivity (µS/cm)	372.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654065
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000114	<0.00001	0.000114	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00146	<0.0005	0.0146	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00224	<0.001	0.0224	<0.01	-	-	-
Copper	0.00547	<0.0003	0.0547	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.001	<0.0004	0.01	<0.004	-	-	-
Selenium	0.00215	<0.001	0.0215	<0.01	-	-	-
Vanadium	0.0604	<0.001	0.604	<0.01	-	-	-
Zinc	0.00205	<0.001	0.0205	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000909	<0.00001	0.00909	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000404	<0.000005	0.000404	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Fluoranthene by GCMS	0.000619	<0.000005	0.00619	<0.00005	-	-	-
Anthracene by GCMS	0.000151	<0.000005	0.00151	<0.00005	-	-	-
Phenanthrene by GCMS	0.00144	<0.000005	0.0144	<0.00005	-	-	-
Fluorene by GCMS	0.000256	<0.000005	0.00256	<0.00005	-	-	-
Chrysene by GCMS	0.0000314	<0.000005	0.000314	<0.00005	-	-	-
Pyrene by GCMS	0.000505	<0.000005	0.00505	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000274	<0.000005	0.000274	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000556	<0.000005	0.0000556	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000432	<0.000002	0.0000432	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00413	<0.000082	0.0413	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	439.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654065
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	439.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654071
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.76	<0.2	7.6	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00112	<0.0005	0.0112	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00472	<0.0003	0.0472	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00116	<0.0004	0.0116	<0.004	-	-	-
Selenium	0.00151	<0.001	0.0151	<0.01	-	-	-
Vanadium	0.0572	<0.001	0.572	<0.01	-	-	-
Zinc	0.00365	<0.001	0.0365	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000645	<0.00001	0.00645	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000998	<0.000005	0.000998	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000642	<0.000005	0.00642	<0.00005	-	-	-
Fluoranthene by GCMS	0.00145	<0.000005	0.0145	<0.00005	-	-	-
Anthracene by GCMS	0.000233	<0.000005	0.00233	<0.00005	-	-	-
Phenanthrene by GCMS	0.00223	<0.000005	0.0223	<0.00005	-	-	-
Fluorene by GCMS	0.000762	<0.000005	0.00762	<0.00005	-	-	-
Chrysene by GCMS	0.0000352	<0.000005	0.000352	<0.00005	-	-	-
Pyrene by GCMS	0.000758	<0.000005	0.00758	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000251	<0.000005	0.000251	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00688	<0.000082	0.0688	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.15
Conductivity (µS/cm)	542.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654071
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.15
Conductivity (µS/cm)	542.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654083
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00131	<0.0005	0.0131	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00418	<0.001	0.0418	<0.01	-	-	-
Copper	0.000417	<0.0003	0.00417	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00162	<0.001	0.0162	<0.01	-	-	-
Vanadium	0.0547	<0.001	0.547	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000533	<0.000005	0.0000533	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000987	<0.000005	0.0000987	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000673	<0.000005	0.0000673	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.66
Conductivity (µS/cm)	238.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654083
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.66
Conductivity (µS/cm)	238.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654090
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D8
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0225	<0.001	0.225	<0.01	-	-	-
Copper	0.00277	<0.0003	0.0277	<0.003	-	-	-
Lead	0.00191	<0.0002	0.0191	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00191	<0.001	0.0191	<0.01	-	-	-
Zinc	0.00256	<0.001	0.0256	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000942	<0.00001	0.000942	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000223	<0.000005	0.00223	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00021	<0.000005	0.0021	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000671	<0.000082	0.00671	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,740.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654090
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D8
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,740.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

22/11/2018 17:10:59

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654103
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-F8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00149	<0.0005	0.0149	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00337	<0.001	0.0337	<0.01	-	-	-
Copper	0.00598	<0.0003	0.0598	<0.003	-	-	-
Lead	0.00132	<0.0002	0.0132	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00105	<0.0004	0.0105	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00104	<0.001	0.0104	<0.01	-	-	-
Zinc	0.00364	<0.001	0.0364	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000339	<0.00001	0.00339	<0.0001	-	-	-
Acenaphthene by GCMS	0.000368	<0.000005	0.00368	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000435	<0.000005	0.000435	<0.00005	-	-	-
Fluoranthene by GCMS	0.0021	<0.000005	0.021	<0.00005	-	-	-
Anthracene by GCMS	0.000301	<0.000005	0.00301	<0.00005	-	-	-
Phenanthrene by GCMS	0.00502	<0.000005	0.0502	<0.00005	-	-	-
Fluorene by GCMS	0.000041	<0.000005	0.00041	<0.00005	-	-	-
Chrysene by GCMS	0.000082	<0.000005	0.00082	<0.00005	-	-	-
Pyrene by GCMS	0.00159	<0.000005	0.0159	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000673	<0.000005	0.000673	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000283	<0.000005	0.000283	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000905	<0.000005	0.0000905	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000813	<0.000002	0.0000813	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.01	<0.000082	0.1	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.27
Conductivity (µS/cm)	418.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654103
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-F8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.27
Conductivity (µS/cm)	418.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654109
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-F8
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.461	<0.2	4.61	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00105	<0.0005	0.0105	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00485	<0.001	0.0485	<0.01	-	-	-
Copper	0.00417	<0.0003	0.0417	<0.003	-	-	-
Lead	0.000815	<0.0002	0.00815	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00682	<0.001	0.0682	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000638	<0.00001	0.00638	<0.0001	-	-	-
Acenaphthene by GCMS	0.000451	<0.000005	0.00451	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000119	<0.000005	0.00119	<0.00005	-	-	-
Fluoranthene by GCMS	0.00607	<0.000005	0.0607	<0.00005	-	-	-
Anthracene by GCMS	0.000617	<0.000005	0.00617	<0.00005	-	-	-
Phenanthrene by GCMS	0.0104	<0.000005	0.104	<0.00005	-	-	-
Fluorene by GCMS	0.00015	<0.000005	0.0015	<0.00005	-	-	-
Chrysene by GCMS	0.000429	<0.000005	0.00429	<0.00005	-	-	-
Pyrene by GCMS	0.00461	<0.000005	0.0461	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000342	<0.000005	0.00342	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000794	<0.000005	0.000794	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000464	<0.000005	0.000464	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000024	<0.000002	0.00024	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0239	<0.000082	0.239	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.91
Conductivity (µS/cm)	283.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654109
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-F8
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.032	<0.01	0.32	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.032	<0.01	0.32	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.049	<0.01	0.49	<0.1	-	-	-
Toluene by GC	0.007	<0.004	0.07	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.91
Conductivity (µS/cm)	283.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

22/11/2018 17:10:59

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654118
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00234	<0.0005	0.0234	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00181	<0.0003	0.0181	<0.003	-	-	-
Lead	0.000259	<0.0002	0.00259	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000476	<0.0004	0.00476	<0.004	-	-	-
Selenium	0.00326	<0.001	0.0326	<0.01	-	-	-
Vanadium	0.0631	<0.001	0.631	<0.01	-	-	-
Zinc	0.00166	<0.001	0.0166	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.589	<0.019	5.89	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000249	<0.00001	0.000249	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000026	<0.000005	0.00026	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000613	<0.000005	0.0000613	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000941	<0.000082	0.000941	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.51
Conductivity (µS/cm)	232.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654118
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.51
Conductivity (µS/cm)	232.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.884

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Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	18653991	18653998	18654006	18654016	18654023	18654030	18654036	18653975	18654060	18654042
Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7	4E-C7	4E-C8	4E-C8	4E-C7V
AGS Ref.										
Depth	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		14-Nov-2018		15-Nov-2018		16-Nov-2018		14-Nov-2018		
Ammoniacal Nitrogen	15-Nov-2018	15-Nov-2018		15-Nov-2018		15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	
Ammonium Soil by Titration	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
Anions by Kone (soil)		15-Nov-2018		15-Nov-2018		09-Nov-2018		15-Nov-2018		
Asbestos ID in Solid Samples		08-Nov-2018		14-Nov-2018		13-Nov-2018		14-Nov-2018		
CEN 10:1 Leachate (1 Stage)	08-Nov-2018	03-Nov-2018		07-Nov-2018		07-Nov-2018	07-Nov-2018	03-Nov-2018	03-Nov-2018	
CEN Readings	13-Nov-2018	10-Nov-2018		09-Nov-2018		09-Nov-2018	09-Nov-2018	10-Nov-2018	10-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	16-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	15-Nov-2018	15-Nov-2018		15-Nov-2018		15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	14-Nov-2018	13-Nov-2018		13-Nov-2018		12-Nov-2018	13-Nov-2018	14-Nov-2018	15-Nov-2018	
EPH CWG (Aliphatic) GC (S)	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	16-Nov-2018	16-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	14-Nov-2018	13-Nov-2018		13-Nov-2018		12-Nov-2018	13-Nov-2018	14-Nov-2018	15-Nov-2018	
EPH CWG (Aromatic) GC (S)	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (S)	12-Nov-2018	13-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	12-Nov-2018	12-Nov-2018	10-Nov-2018
GRO by GC-FID (W)	13-Nov-2018	12-Nov-2018		12-Nov-2018		12-Nov-2018	09-Nov-2018	12-Nov-2018	12-Nov-2018	
Mercury Dissolved	16-Nov-2018	16-Nov-2018		16-Nov-2018		16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	
Metals in solid samples by OES	16-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	12-Nov-2018	14-Nov-2018	19-Nov-2018	15-Nov-2018
PAH by GCMS	08-Nov-2018	08-Nov-2018	07-Nov-2018	08-Nov-2018	07-Nov-2018	09-Nov-2018	16-Nov-2018	08-Nov-2018	09-Nov-2018	07-Nov-2018
PAH Spec MS - Aqueous (W)	14-Nov-2018	14-Nov-2018		12-Nov-2018		09-Nov-2018	12-Nov-2018	14-Nov-2018	13-Nov-2018	
pH	14-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018	13-Nov-2018
pH Value	14-Nov-2018	13-Nov-2018		14-Nov-2018		14-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	
Phenols by HPLC (S)	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	12-Nov-2018	13-Nov-2018	14-Nov-2018	06-Nov-2018	14-Nov-2018	12-Nov-2018
Sample description	07-Nov-2018	02-Nov-2018	02-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	03-Nov-2018
Total Organic Carbon	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018
Total Sulphate		07-Nov-2018		13-Nov-2018		12-Nov-2018		13-Nov-2018		
Total Sulphur		13-Nov-2018		07-Nov-2018		14-Nov-2018		07-Nov-2018		
TPH CWG (W)	14-Nov-2018	13-Nov-2018		13-Nov-2018		12-Nov-2018	13-Nov-2018	14-Nov-2018	15-Nov-2018	
TPH CWG GC (S)	12-Nov-2018	13-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	12-Nov-2018	16-Nov-2018	16-Nov-2018
VOC MS (S)	14-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018	12-Nov-2018

Lab Sample No(s)	18654118	18654083	18654090	18653985	18654098	18654049	18654065	18654071	18654079	18654103
Customer Sample Ref.	4E-D7	4E-D8	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1	4E-E1V	4E-F8
AGS Ref.										
Depth	0.50 - 0.50	0.50 - 0.50	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	16-Nov-2018		16-Nov-2018			19-Nov-2018		14-Nov-2018		16-Nov-2018
Ammoniacal Nitrogen	15-Nov-2018	15-Nov-2018	15-Nov-2018			15-Nov-2018	15-Nov-2018	15-Nov-2018		15-Nov-2018
Ammonium Soil by Titration	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
Anions by Kone (soil)	09-Nov-2018		15-Nov-2018			20-Nov-2018		15-Nov-2018		15-Nov-2018
Asbestos ID in Solid Samples	09-Nov-2018		13-Nov-2018			14-Nov-2018		09-Nov-2018		09-Nov-2018
Asbestos Quantification - Full			16-Nov-2018							
CEN 10:1 Leachate (1 Stage)	08-Nov-2018	03-Nov-2018	03-Nov-2018			08-Nov-2018	08-Nov-2018	03-Nov-2018		03-Nov-2018
CEN Readings	10-Nov-2018	10-Nov-2018	10-Nov-2018			13-Nov-2018	10-Nov-2018	10-Nov-2018		10-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	15-Nov-2018	15-Nov-2018	13-Nov-2018			15-Nov-2018	15-Nov-2018	15-Nov-2018		15-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	14-Nov-2018	14-Nov-2018	14-Nov-2018			14-Nov-2018	15-Nov-2018	14-Nov-2018		14-Nov-2018
EPH CWG (Aliphatic) GC (S)	16-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	16-Nov-2018	16-Nov-2018	09-Nov-2018	16-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	14-Nov-2018	14-Nov-2018	14-Nov-2018			14-Nov-2018	15-Nov-2018	14-Nov-2018		14-Nov-2018
EPH CWG (Aromatic) GC (S)	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (S)	12-Nov-2018	10-Nov-2018	10-Nov-2018	12-Nov-2018	10-Nov-2018	12-Nov-2018	10-Nov-2018	10-Nov-2018	13-Nov-2018	10-Nov-2018
GRO by GC-FID (W)	12-Nov-2018	12-Nov-2018	12-Nov-2018			13-Nov-2018	14-Nov-2018	12-Nov-2018		12-Nov-2018
Mercury Dissolved	16-Nov-2018	16-Nov-2018	16-Nov-2018			16-Nov-2018	16-Nov-2018	16-Nov-2018		16-Nov-2018
Metals in solid samples by OES	15-Nov-2018	19-Nov-2018	15-Nov-2018	14-Nov-2018	16-Nov-2018	20-Nov-2018	19-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018
PAH by GCMS	12-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018	08-Nov-2018	07-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018
PAH Spec MS - Aqueous (W)	14-Nov-2018	14-Nov-2018	14-Nov-2018			13-Nov-2018	13-Nov-2018	14-Nov-2018		14-Nov-2018
pH	14-Nov-2018	13-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
pH Value	14-Nov-2018	14-Nov-2018	12-Nov-2018			13-Nov-2018	14-Nov-2018	12-Nov-2018		14-Nov-2018
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	15-Nov-2018	13-Nov-2018	14-Nov-2018	12-Nov-2018	14-Nov-2018	12-Nov-2018	14-Nov-2018
Sample description	03-Nov-2018	02-Nov-2018	02-Nov-2018	07-Nov-2018	02-Nov-2018	03-Nov-2018	03-Nov-2018	02-Nov-2018	07-Nov-2018	02-Nov-2018
Total Organic Carbon	16-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
Total Sulphate	12-Nov-2018		13-Nov-2018			16-Nov-2018		13-Nov-2018		13-Nov-2018
Total Sulphur	13-Nov-2018		07-Nov-2018			16-Nov-2018		07-Nov-2018		07-Nov-2018
TPH CWG (W)	14-Nov-2018	14-Nov-2018	14-Nov-2018			14-Nov-2018	15-Nov-2018	14-Nov-2018		14-Nov-2018
TPH CWG GC (S)	16-Nov-2018	10-Nov-2018	10-Nov-2018	12-Nov-2018	10-Nov-2018	12-Nov-2018	16-Nov-2018	16-Nov-2018	13-Nov-2018	16-Nov-2018
VOC MS (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	14-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Lab Sample No(s)	18654109	18654114
Customer Sample Ref.	4E-F8	4E-F8V
AGS Ref.		
Depth	0.90 - 0.90	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)
Ammoniacal Nitrogen	15-Nov-2018	
Ammonium Soil by Titration	16-Nov-2018	16-Nov-2018
CEN 10:1 Leachate (1 Stage)	03-Nov-2018	
CEN Readings	10-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	16-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	15-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	15-Nov-2018	
EPH CWG (Aliphatic) GC (S)	09-Nov-2018	09-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	15-Nov-2018	
EPH CWG (Aromatic) GC (S)	09-Nov-2018	09-Nov-2018
GRO by GC-FID (S)	10-Nov-2018	10-Nov-2018
GRO by GC-FID (W)	12-Nov-2018	
Mercury Dissolved	16-Nov-2018	
Metals in solid samples by OES	16-Nov-2018	16-Nov-2018
PAH by GCMS	08-Nov-2018	08-Nov-2018
PAH Spec MS - Aqueous (W)	13-Nov-2018	
pH	14-Nov-2018	14-Nov-2018
pH Value	13-Nov-2018	
Phenols by HPLC (S)	13-Nov-2018	13-Nov-2018
Sample description	02-Nov-2018	07-Nov-2018
Total Organic Carbon	16-Nov-2018	16-Nov-2018
TPH CWG (W)	15-Nov-2018	
TPH CWG GC (S)	10-Nov-2018	10-Nov-2018
VOC MS (S)	12-Nov-2018	12-Nov-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
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SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	22 November 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181102-43
Your Reference:	
Location:	Llanwern
Report No:	482241

We received 22 samples on Friday November 02, 2018 and 22 of these samples were scheduled for analysis which was completed on Tuesday November 20, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18653991	4E-A7		0.40 - 0.40	01/11/2018
18653998	4E-A7		0.90 - 0.90	01/11/2018
18654006	4E-A7V		2.10 - 2.10	01/11/2018
18654016	4E-B7		0.50 - 0.50	01/11/2018
18654023	4E-B7V		1.60 - 1.60	01/11/2018
18654030	4E-C7		0.50 - 0.50	01/11/2018
18654036	4E-C7		1.00 - 1.00	01/11/2018
18653975	4E-C8		0.50 - 0.50	01/11/2018
18654060	4E-C8		1.00 - 1.00	01/11/2018
18654042	4E-C7V		1.80 - 1.80	01/11/2018
18654118	4E-D7		0.50 - 0.50	01/11/2018
18654083	4E-D8		0.50 - 0.50	01/11/2018
18654090	4E-D8		0.90 - 0.90	01/11/2018
18653985	4E-D7V		1.90 - 1.90	01/11/2018
18654098	4E-D8V		1.70 - 1.70	01/11/2018
18654049	4E-E1		0.50 - 0.50	01/11/2018
18654065	4E-E1		1.00 - 1.00	01/11/2018
18654071	4E-E1		2.00 - 2.00	01/11/2018
18654079	4E-E1V		2.50 - 2.50	01/11/2018
18654103	4E-F8		0.50 - 0.50	01/11/2018
18654109	4E-F8		0.90 - 0.90	01/11/2018
18654114	4E-F8V		1.50 - 1.50	01/11/2018

Maximum Sample/Coolbox Temperature (°C) : **8.4**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18653991			18653998			18654006		18654016			18654023		18654030			18654036
Customer Sample Reference			4E-A7			4E-A7			4E-A7V		4E-B7			4E-B7V		4E-C7			4E-C7
AGS Reference																			
Depth (m)			0.40 - 0.40			0.90 - 0.90			2.10 - 2.10		0.50 - 0.50			1.60 - 1.60		0.50 - 0.50			1.00 - 1.00
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 9					X					X					X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 15	X			X					X					X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 9					X					X					X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 9				X					X					X					
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1																			
CEN Readings	All	NDPs: 0 Tests: 15	X			X					X					X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 37	X	X		X	X		X		X	X		X		X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 15	X			X					X					X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 22			X			X		X			X		X			X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		

18654098	4E-D8V		1.70 - 1.70	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S			X					X				X			X				
18653985	4E-D7V		1.90 - 1.90	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S			X					X				X			X				
18654090	4E-D8		0.90 - 0.90	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X				
				1kg TUB	S		X			X	X	X	X	X	X			X					X	
18654083	4E-D8		0.50 - 0.50	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S			X					X				X			X				
				1kg TUB	S		X					X	X	X	X			X					X	
18654118	4E-D7		0.50 - 0.50	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X				
				1kg TUB	S		X			X		X	X	X	X			X					X	
18654042	4E-C7V		1.80 - 1.80	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S			X					X				X			X				
18654060	4E-C8		1.00 - 1.00	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S			X					X				X			X				
				1kg TUB	S		X					X	X	X	X			X					X	
18653975	4E-C8		0.50 - 0.50	60g VOC (ALE215)	S																			X	
				250g Amber Jar (ALE210)	S	X		X	X				X				X			X				
				1kg TUB	S		X			X		X	X	X	X			X					X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18653991			18653998			18654006		18654016			18654023		18654030			18654036		
Customer Sample Reference			4E-A7			4E-A7			4E-A7V		4E-B7			4E-B7V		4E-C7			4E-C7		
AGS Reference																					
Depth (m)			0.40 - 0.40			0.90 - 0.90			2.10 - 2.10		0.50 - 0.50			1.60 - 1.60		0.50 - 0.50			1.00 - 1.00		
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 15	X			X					X					X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		
pH	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
pH Value	All	NDPs: 0 Tests: 15	X			X					X					X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
Sample description	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 9					X					X					X				
Total Sulphur	All	NDPs: 0 Tests: 9					X					X					X				
TPH CWG (W)	All	NDPs: 0 Tests: 15	X			X					X					X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 22		X			X		X			X		X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 22			X			X		X			X		X			X			X

18654098	4E-D8V		1.70 - 1.70	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
18653985	4E-D7V		1.90 - 1.90	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
18654090	4E-D8		0.90 - 0.90	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X	
				1kg TUB	S	X			X		X							X			
18654083	4E-D8		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
				1kg TUB	S	X			X		X							X			
18654118	4E-D7		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X	
				1kg TUB	S	X			X		X							X			
18654042	4E-C7V		1.80 - 1.80	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
18654060	4E-C8		1.00 - 1.00	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X					X	
				1kg TUB	S	X			X		X							X			
18653975	4E-C8		0.50 - 0.50	60g VOC (ALE215)	S																X
				250g Amber Jar (ALE210)	S		X	X		X		X	X	X	X	X			X	
				1kg TUB	S	X			X		X							X			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			18654049	4E-E1		0.50 - 0.50	1kg TUB	S
			18654049	4E-E1		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18654049	4E-E1		0.50 - 0.50	60g VOC (ALE215)	S
			18654065	4E-E1		1.00 - 1.00	1kg TUB	S
			18654065	4E-E1		1.00 - 1.00	250g Amber Jar (ALE210)	S
			18654065	4E-E1		1.00 - 1.00	60g VOC (ALE215)	S
			18654071	4E-E1		2.00 - 2.00	1kg TUB	S
			18654071	4E-E1		2.00 - 2.00	250g Amber Jar (ALE210)	S
			18654071	4E-E1		2.00 - 2.00	60g VOC (ALE215)	S
			18654079	4E-E1V		2.50 - 2.50	1kg TUB	S
			18654079	4E-E1V		2.50 - 2.50	60g VOC (ALE215)	S
			18654103	4E-F8		0.50 - 0.50	1kg TUB	S
			18654103	4E-F8		0.50 - 0.50	250g Amber Jar (ALE210)	S
			18654103	4E-F8		0.50 - 0.50	60g VOC (ALE215)	S
			18654109	4E-F8		0.90 - 0.90	1kg TUB	S
			18654109	4E-F8		0.90 - 0.90	250g Amber Jar (ALE210)	S
			18654109	4E-F8		0.90 - 0.90	60g VOC (ALE215)	S
			18654114	4E-F8V		1.50 - 1.50	250g Amber Jar (ALE210)	S
			18654114	4E-F8V		1.50 - 1.50	60g VOC (ALE215)	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 9		X				
				X				
				X				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 22		X			X	
				X			X	
				X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 9		X				
				X				
				X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 9	X			X		
			X			X		
			X			X		
CEN Readings	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 37	X	X		X	X	
			X	X		X	X	
			X	X		X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 22		X			X	
				X			X	
				X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 22		X			X	
				X			X	
				X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 22			X			X
					X			X
					X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 15	X			X		
			X			X		
			X			X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18654049			18654065			18654071			18654079		18654103			18654109			18654114	
Customer Sample Reference			4E-E1			4E-E1			4E-E1			4E-E1V		4E-F8			4E-F8			4E-F8V	
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			2.50 - 2.50		0.50 - 0.50			0.90 - 0.90			1.50 - 1.50	
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
PAH by GCMS	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 15	X			X			X					X			X				
pH	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
pH Value	All	NDPs: 0 Tests: 15	X			X			X					X			X				
Phenols by HPLC (S)	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
Sample description	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
Total Sulphate	All	NDPs: 0 Tests: 9		X						X					X						
Total Sulphur	All	NDPs: 0 Tests: 9		X						X					X						
TPH CWG (W)	All	NDPs: 0 Tests: 15	X			X			X					X			X				
TPH CWG GC (S)	All	NDPs: 0 Tests: 22		X			X			X		X			X			X		X	
VOC MS (S)	All	NDPs: 0 Tests: 22			X			X			X		X			X			X			X

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18653991	4E-A7	0.40 - 0.40	Dark Brown	Sandy Loam	Vegetation	Stones
18653998	4E-A7	0.90 - 0.90	Dark Brown	Stone/Soil	Stones	None
18654006	4E-A7V	2.10 - 2.10	Dark Brown	Silty Clay	Stones	Vegetation
18654016	4E-B7	0.50 - 0.50	Dark Brown	Stone/Soil	Stones	None
18654023	4E-B7V	1.60 - 1.60	Dark Brown	Silty Clay Loam	Stones	Vegetation
18654030	4E-C7	0.50 - 0.50	Dark Brown	Sand	Stones	None
18654036	4E-C7	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation
18653975	4E-C8	0.50 - 0.50	Black	Sand	Stones	N/A
18654060	4E-C8	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	None
18654042	4E-C7V	1.80 - 1.80	Dark Brown	Clay	Stones	None
18654118	4E-D7	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
18654083	4E-D8	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
18654090	4E-D8	0.90 - 0.90	Dark Brown	Sandy Loam	Stones	None
18653985	4E-D7V	1.90 - 1.90	Dark Brown	Sandy Loam	Vegetation	Stones
18654098	4E-D8V	1.70 - 1.70	Grey	Clay	Vegetation	None
18654049	4E-E1	0.50 - 0.50	Black	Sand	Stones	Crushed Brick
18654065	4E-E1	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
18654071	4E-E1	2.00 - 2.00	Dark Brown	Stone/Soil	Stones	Vegetation
18654079	4E-E1V	2.50 - 2.50	Dark Brown	Loamy Sand	Vegetation	Stones
18654103	4E-F8	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	None
18654109	4E-F8	0.90 - 0.90	Dark Brown	Sand	Stones	None
18654114	4E-F8V	1.50 - 1.50	Dark Brown	Clay	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7
			Depth (m)	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18653991	18653998	18654006	18654016	18654023	18654030
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.4	14	28	7.2	24	7.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 #	218 M	21 #	130 M	13.6 M
Phenol	<0.01 mg/kg	TM062 (S)		0.011 M	<0.01 #	<0.01 M	0.0108 #	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 #	0.0139 M	<0.01 #	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		0.055 M	<0.015 #	<0.015 M	<0.015 #	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.066 M	<0.035 #	<0.035 M	<0.035 #	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.189		0.506		0.311
Sulphate, Total potential	<0.06 %	TM132			0.567		1.52		0.933
Soil Organic Matter (SOM)	<0.35 %	TM132		6.81 #	8.45 #	3.22 #	1.56 #	1.61 #	6.84 #
pH	1 pH Units	TM133		10.3 M	11.6 #	8.09 M	12.7 #	7.89 M	10.4 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 #	<1 M	<1 #	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 #	<1 M	<1 #	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		13.6 M	<6 #	12.9 M	10.5 #	19.1 M	15.3 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 #	0.37 M	<0.2 #	0.316 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		188 M	359 #	38.2 M	775 #	40.8 M	63.2 M
Copper	<1.4 mg/kg	TM181		25.1 M	20 #	14.6 M	34.4 #	11.4 M	25.3 M
Iron	<1000 mg/kg	TM181		183000 #	134000 #	37600 #	220000 #	38200 #	174000 #
Lead	<0.7 mg/kg	TM181		86.7 M	36 #	33.3 M	31.2 #	29.4 M	116 M
Manganese	<0.13 mg/kg	TM181		11500 M	26600 #	854 M	33000 #	523 M	11400 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 #	<0.14 M	<1.4 #	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		21.6 M	14.6 #	34.2 M	26.4 #	39.3 M	31.6 M
Selenium	<1 mg/kg	TM181		<10 #	10.9 #	<1 #	22 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		276 #	419 #	64 #	591 #	66.9 #	226 #
Zinc	<1.9 mg/kg	TM181		346 M	85.9 #	115 M	97.6 #	108 M	422 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.549		0.671		0.381
Calcium	<21 mg/kg	TM224			160000		233000		143000
Magnesium	<8 mg/kg	TM224			4470		12100		12000
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.133 #		0.104 #		0.196 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C7	4E-C8	4E-C8	4E-C7V	4E-D7	4E-D8
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654036	18653975	18654060	18654042	18654118	18654083
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	7.3	13	38	15	7.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 #	269 M	28.2 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	0.0108 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 #	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 #	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132			0.673			0.131	
Sulphate, Total potential	<0.06 %	TM132			2.02			0.393	
Soil Organic Matter (SOM)	<0.35 %	TM132		27.1 #	84.8 #	9.86 #	9.19 #	2.78 #	21.6 #
pH	1 pH Units	TM133		11.4 M	8.9 M	10.8 #	8.25 M	10.3 M	11.2 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 #	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.98 M	4.99 M	8.49 #	15.5 M	12.2 M	8.99 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	1.14 #	<0.02 M	<0.2 M	1.11 M
Chromium	<0.9 mg/kg	TM181		168 M	3.33 M	161 #	115 M	<9 M	190 M
Copper	<1.4 mg/kg	TM181		24.9 M	13.7 M	22.1 #	23.3 M	<14 M	22.3 M
Iron	<1000 mg/kg	TM181		152000 #	48100 #	88300 #	68100 #	77100 #	110000 #
Lead	<0.7 mg/kg	TM181		91.6 M	29.2 M	46 #	45.3 M	94.4 M	43.7 M
Manganese	<0.13 mg/kg	TM181		7850 M	3070 M	12700 #	6170 M	1940 M	11500 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<0.14 #	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		24.2 M	12 M	15.4 #	22.1 M	14.3 M	14.9 M
Selenium	<1 mg/kg	TM181		<10 #	2.17 #	5.34 #	2.88 #	<10 #	2.91 #
Vanadium	<0.2 mg/kg	TM181		140 #	17.7 #	177 #	108 #	43.7 #	138 #
Zinc	<1.9 mg/kg	TM181		323 M	112 M	183 #	149 M	270 M	165 M
Sulphate, acid soluble (total)	<0.02 %	TM221			0.396			0.296	
Calcium	<21 mg/kg	TM224			104000			196000	
Magnesium	<8 mg/kg	TM224			14000			16800	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0695 M			0.15 M	

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1
			Depth (m)	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654090	18653985	18654098	18654049	18654065	18654071
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		5.7	31	25	12	8.9	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		19.1 M	262 M	92.4 M	<12 M	<12 M	<12 #
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 #
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 #
Sulphur, Total	<0.02 %	TM132		0.233			0.383		0.3
Sulphate, Total potential	<0.06 %	TM132		0.699			1.15		0.9
Soil Organic Matter (SOM)	<0.35 %	TM132		12.3 #	5.07 #	1.55 #	10.7 #	19.3 #	6.6 #
pH	1 pH Units	TM133		12.4 M	7.87 M	7.99 M	9.42 M	11.2 M	11.5 #
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 #
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 #
Arsenic	<0.6 mg/kg	TM181		8.83 M	15 M	20.7 M	7.22 M	8.25 M	6.69 #
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.2 M	0.394 M	<0.02 M	0.877 M	<0.02 #
Chromium	<0.9 mg/kg	TM181		732 M	39.8 M	55.9 M	37 M	115 M	143 #
Copper	<1.4 mg/kg	TM181		36.5 M	<14 M	12.7 M	14.6 M	29.2 M	15.4 #
Iron	<1000 mg/kg	TM181		228000 #	42200 #	46000 #	41600 #	64500 #	84900 #
Lead	<0.7 mg/kg	TM181		11.4 M	39.8 M	27.7 M	29.2 M	35.4 M	26.2 #
Manganese	<0.13 mg/kg	TM181		42500 M	1300 M	1500 M	3000 M	10400 M	17100 #
Mercury	<0.14 mg/kg	TM181		<1.4 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 #
Nickel	<0.2 mg/kg	TM181		26.3 M	29.4 M	38.1 M	17.1 M	16 M	10.1 #
Selenium	<1 mg/kg	TM181		18 #	<10 #	<1 #	1.44 #	4.09 #	5.45 #
Vanadium	<0.2 mg/kg	TM181		507 #	63.9 #	81 #	47 #	155 #	247 #
Zinc	<1.9 mg/kg	TM181		45.5 M	106 M	103 M	128 M	130 M	83.5 #
Sulphate, acid soluble (total)	<0.02 %	TM221		0.32			0.548		0.42
Calcium	<21 mg/kg	TM224		232000			123000		171000
Magnesium	<8 mg/kg	TM224		13700			17000		2470
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0476 M			0.137 M		0.168 #
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		N/A					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E1V	4E-F8	4E-F8	4E-F8V		
			Depth (m)	2.50 - 2.50	0.50 - 0.50	0.90 - 0.90	1.50 - 1.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018		
			SDG Ref	181102-43	181102-43	181102-43	181102-43		
			Lab Sample No.(s)	18654079	18654103	18654109	18654114		
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		18	7	6.1	24		
Exchangeable Ammonia as N	<12 mg/kg	TM024		227 M	<12 M	<12 M	321 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	0.0215 M	0.0106 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M		
Sulphur, Total	<0.02 %	TM132			0.141				
Sulphate, Total potential	<0.06 %	TM132			0.423				
Soil Organic Matter (SOM)	<0.35 %	TM132		1.81 #	0.722 #	0.76 #	1.23 #		
pH	1 pH Units	TM133		8.36 M	12.7 M	12.4 M	8 M		
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M		
Arsenic	<0.6 mg/kg	TM181		14 M	<6 M	<6 M	13.2 M		
Cadmium	<0.02 mg/kg	TM181		0.428 M	<0.2 M	<0.2 M	<0.02 M		
Chromium	<0.9 mg/kg	TM181		34.4 M	528 M	824 M	34 M		
Copper	<1.4 mg/kg	TM181		12.1 M	18 M	14.8 M	11.3 M		
Iron	<1000 mg/kg	TM181		37200 #	150000 #	184000 #	36000 #		
Lead	<0.7 mg/kg	TM181		28.7 M	19.7 M	<7 M	28.6 M		
Manganese	<0.13 mg/kg	TM181		1600 M	26700 M	44000 M	803 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<1.4 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		35.7 M	12.8 M	4.68 M	43.7 M		
Selenium	<1 mg/kg	TM181		<1 #	20.7 #	25.1 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		59.9 #	380 #	542 #	59.5 #		
Zinc	<1.9 mg/kg	TM181		113 M	89.1 M	25.6 M	115 M		
Sulphate, acid soluble (total)	<0.02 %	TM221			0.37				
Calcium	<21 mg/kg	TM224			235000				
Magnesium	<8 mg/kg	TM224			9850				
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243			0.0212 M				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7
			Depth (m)	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18653991	18653998	18654006	18654016	18654023	18654030
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.2	89.5	88.4	94.5	86.9	86
Acenaphthene-d10 % recovery**	%	TM218		82.2	98.9	88.7	95.4	88.7	90.1
Phenanthrene-d10 % recovery**	%	TM218		103	104	90.8	101	90.7	98.8
Chrysene-d12 % recovery**	%	TM218		98.9	102	92.7	100	90.7	103
Perylene-d12 % recovery**	%	TM218		87.1	95.3	91	92.8	89.1	97.4
Naphthalene	<0.009 mg/kg	TM218		0.181 M	0.0312 #	<0.009 M	0.0621 #	<0.009 M	0.0956 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0927 M	<0.012 #	<0.012 M	0.0154 #	<0.012 M	0.0431 M
Acenaphthene	<0.008 mg/kg	TM218		0.00918 M	0.244 #	<0.008 M	0.0444 #	<0.008 M	0.0173 M
Fluorene	<0.01 mg/kg	TM218		0.0784 M	0.0957 #	<0.01 M	0.0211 #	<0.01 M	0.029 M
Phenanthrene	<0.015 mg/kg	TM218		0.511 M	0.583 #	<0.015 M	0.427 #	<0.015 M	0.291 M
Anthracene	<0.016 mg/kg	TM218		0.144 M	0.0602 #	<0.016 M	0.0662 #	<0.016 M	0.0747 M
Fluoranthene	<0.017 mg/kg	TM218		0.781 M	0.33 #	<0.017 M	1.24 #	<0.017 M	0.492 M
Pyrene	<0.015 mg/kg	TM218		0.798 M	0.564 #	<0.015 M	1.39 #	<0.015 M	0.388 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.315 M	0.116 #	<0.014 M	0.923 #	<0.014 M	0.247 M
Chrysene	<0.01 mg/kg	TM218		0.307 M	0.311 #	<0.01 M	1.02 #	<0.01 M	0.256 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.352 M	0.389 #	<0.015 M	1.09 #	<0.015 M	0.267 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.157 M	0.14 #	<0.014 M	0.624 #	<0.014 M	0.106 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.291 M	0.131 #	<0.015 M	1.16 #	<0.015 M	0.238 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.217 M	0.174 #	<0.018 M	0.743 #	<0.018 M	0.157 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0566 M	0.0382 #	<0.023 M	0.178 #	<0.023 M	0.0467 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.265 M	0.208 #	<0.024 M	0.895 #	<0.024 M	0.206 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		4.56	3.42	<0.118	9.91	<0.118	2.95

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C7	4E-C8	4E-C8	4E-C7V	4E-D7	4E-D8
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654036	18653975	18654060	18654042	18654118	18654083
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		0	91.4	88.1	86.9	93.6	90.5
Acenaphthene-d10 % recovery**	%	TM218		0	92	89.7	88.9	87.4	89.7
Phenanthrene-d10 % recovery**	%	TM218		88.4	93.9	99.2	89.6	86.8	89.4
Chrysene-d12 % recovery**	%	TM218		77.2	91.7	104	92.7	81.2	90.6
Perylene-d12 % recovery**	%	TM218		69.5	82.2	98.8	90.3	80.4	84.5
Naphthalene	<0.009 mg/kg	TM218		<0.009 ♦ M	0.123 M	0.0792 #	0.213 M	0.116 M	0.0666 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 ♦ M	<0.06 M	0.0439 #	<0.012 M	0.0359 M	0.0312 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 ♦ M	<0.04 M	0.0174 #	0.0216 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 ♦ M	0.0779 M	0.0192 #	<0.01 M	0.0155 M	0.0147 M
Phenanthrene	<0.015 mg/kg	TM218		0.376 ♦ M	0.79 M	0.277 #	0.0871 M	0.15 M	0.18 M
Anthracene	<0.016 mg/kg	TM218		0.0938 ♦ M	0.144 M	0.069 #	<0.016 M	0.0411 M	0.0473 M
Fluoranthene	<0.017 mg/kg	TM218		0.576 ♦ M	0.894 M	0.815 #	0.175 M	0.195 M	0.368 M
Pyrene	<0.015 mg/kg	TM218		0.43 ♦ M	0.703 M	0.806 #	0.224 M	0.171 M	0.372 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.192 ♦ M	0.381 M	0.7 #	0.142 M	0.0983 M	0.289 M
Chrysene	<0.01 mg/kg	TM218		0.574 ♦ M	0.398 M	0.699 #	0.153 M	0.11 M	0.34 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.376 ♦ M	0.545 M	0.932 #	0.155 M	0.16 M	0.64 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 ♦ M	0.174 M	0.372 #	0.0746 M	0.0491 M	0.226 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.209 ♦ M	0.288 M	0.898 #	0.154 M	0.0817 M	0.303 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.19 ♦ M	0.203 M	0.528 #	0.106 M	0.063 M	0.269 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0336 ♦ M	<0.115 M	0.153 #	<0.023 M	<0.023 M	0.0778 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.167 ♦ M	0.256 M	0.664 #	0.106 M	0.0688 M	0.32 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.22	4.98	7.07	1.61	1.35	3.54

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1
			Depth (m)	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654090	18653985	18654098	18654049	18654065	18654071
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		86.8	96.2	91.2	91.9	88.7	89
Acenaphthene-d10 % recovery**	%	TM218		92.5	96.1	92.9	95.3	89.8	91.4
Phenanthrene-d10 % recovery**	%	TM218		100	101	94.1	97.2	94.9	98.5
Chrysene-d12 % recovery**	%	TM218		104	98.7	97.7	88.7	92	104
Perylene-d12 % recovery**	%	TM218		99.4	91.8	97	73	89.4	99.2
Naphthalene	<0.009 mg/kg	TM218		0.0439 M	1.33 M	0.545 M	0.325 M	0.715 M	0.176 #
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	0.133 M	0.616 M	0.231 #
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.0505 M	0.113 M	<0.04 M	0.0572 M	0.0312 #
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0178 M	0.0476 M	0.121 M	0.607 M	0.284 #
Phenanthrene	<0.015 mg/kg	TM218		0.183 M	0.141 M	0.513 M	1.37 M	6.7 M	2.35 #
Anthracene	<0.016 mg/kg	TM218		0.0277 M	<0.016 M	0.0289 M	0.362 M	1.59 M	0.434 #
Fluoranthene	<0.017 mg/kg	TM218		0.642 M	0.216 M	0.766 M	2.55 M	10.4 M	4.25 #
Pyrene	<0.015 mg/kg	TM218		0.689 M	0.192 M	0.664 M	1.96 M	8.01 M	2.67 #
Benz(a)anthracene	<0.014 mg/kg	TM218		0.583 M	0.103 M	0.16 M	1.15 M	4.96 M	1.78 #
Chrysene	<0.01 mg/kg	TM218		0.727 M	0.115 M	0.185 M	1.08 M	4.27 M	1.68 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.33 M	0.107 M	0.0787 M	1.2 M	5.49 M	1.91 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.451 M	0.0548 M	0.0357 M	0.553 M	1.96 M	0.685 #
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.76 M	0.103 M	0.0392 M	1 M	4.09 M	1.16 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.566 M	0.0774 M	<0.018 M	0.665 M	3.36 M	0.679 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.142 M	<0.023 M	<0.023 M	0.177 M	0.686 M	0.216 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.661 M	0.0861 M	<0.024 M	0.718 M	2.82 M	0.792 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		6.8	2.6	3.17	13.4	56.3	19.3

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E1V	4E-F8	4E-F8	4E-F8V		
			Depth (m)	2.50 - 2.50	0.50 - 0.50	0.90 - 0.90	1.50 - 1.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018		
			SDG Ref	181102-43	181102-43	181102-43	181102-43		
			Lab Sample No.(s)	18654079	18654103	18654109	18654114		
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		96.8	92.4	88.6	92.9		
Acenaphthene-d10 % recovery**	%	TM218		96.2	92.8	91.2	93.2		
Phenanthrene-d10 % recovery**	%	TM218		101	99.7	99.4	98.6		
Chrysene-d12 % recovery**	%	TM218		97.9	97.2	105	94.5		
Perylene-d12 % recovery**	%	TM218		84.3	90.3	96.5	84.5		
Naphthalene	<0.009 mg/kg	TM218		0.0174 M	0.143 M	0.222 M	<0.009 M		
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.0304 M	0.0185 M	<0.012 M		
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.175 M	0.104 M	<0.008 M		
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.0756 M	0.0273 M	<0.01 M		
Phenanthrene	<0.015 mg/kg	TM218		0.0667 M	4.45 M	2.49 M	<0.015 M		
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.468 M	0.246 M	<0.016 M		
Fluoranthene	<0.017 mg/kg	TM218		0.107 M	7.66 M	3.69 M	<0.017 M		
Pyrene	<0.015 mg/kg	TM218		0.0834 M	7.01 M	3.28 M	<0.015 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0421 M	4.53 M	2.15 M	<0.014 M		
Chrysene	<0.01 mg/kg	TM218		0.0397 M	4.67 M	2.31 M	<0.01 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0398 M	5.95 M	3.39 M	<0.015 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	2.49 M	1.4 M	<0.014 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0319 M	5.18 M	2.24 M	<0.015 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0231 M	3.52 M	1.38 M	<0.018 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.774 M	0.366 M	<0.023 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	3.64 M	1.57 M	<0.024 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.451	50.8	24.9	<0.118		

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7
			Depth (m)	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18653991	18653998	18654006	18654016	18654023	18654030
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		76.8	103	104	98	98	75
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		22.3 M	361 #	5.4 M	0.355 #	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.2	<0.02	<0.02	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.172	3.32	0.0945	0.0377	<0.02	0.0314
Aliphatics >C8-C10	<0.01 mg/kg	TM089		2.5	46.7	0.62	0.0237	<0.02	0.0238
Aliphatics >C10-C12	<0.01 mg/kg	TM089		10.8	168	2.55	0.163	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		260	471	2.24	5.04	<0.1	2.48
Aliphatics >C16-C21	<0.1 mg/kg	TM173		351	579	4.26	21.3	<0.1	17
Aliphatics >C21-C35	<0.1 mg/kg	TM173		2980	2980	20.3	136	<0.1	143
Aliphatics >C35-C44	<0.1 mg/kg	TM173		513	381	5.07	39.3	<0.1	92.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		4100	4410	31.8	202	<0.1	255
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.2	<0.02	<0.02	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.2	<0.02	<0.02	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		1.67	31.1	0.413	<0.02	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		7.19	112	1.7	0.109	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		77.4	177	<0.1	1.71	0.174	4.01
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		108	170	1.97	10.9	<0.1	14.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		425	561	24.3	90.5	0.286	97.9
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		86.1	178	13.3	38.7	0.525	116
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		29.5	67	5.5	13.9	0.379	55
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		696	1090	39.5	142	0.986	232
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		4820	5850	76.8	344	0.986	488

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C7	4E-C8	4E-C8	4E-C7V	4E-D7	4E-D8
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654036	18653975	18654060	18654042	18654118	18654083
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		74	46	88.8	123	115	70
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	<0.1 #	<0.2 #	3.42 M	<0.2 M	0.529 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.0697	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.219	<0.02	0.0606
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.481	<0.02	0.0412
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	1.32	<0.02	0.231
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.39	7.26	<0.1	1.15	<0.1	2.36
Aliphatics >C16-C21	<0.1 mg/kg	TM173		21.9	42.4	0.808	3.98	9.87	10.5
Aliphatics >C21-C35	<0.1 mg/kg	TM173		80.3	241	109	17.1	158	81.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		15.3	71.6	32.6	14.9	37.1	28.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		120	362	142	37.2	205	123
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.0956	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.0308	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.321	<0.02	0.0271
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	<0.01	<0.02	0.881	<0.02	0.154
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.92	7.02	2.65	1.63	<0.1	2.16
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.06	25.1	12.2	5.65	1.25	7.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		42	144	153	55.3	17.7	51.7
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		17.3	82.1	94.9	10.8	1.63	36.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.23	36.3	38.8	2.82	<0.1	16.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		71.3	258	263	73.4	20.6	98
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		191	620	405	114	226	221

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1
			Depth (m)	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654090	18653985	18654098	18654049	18654065	18654071
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		97	91.9	112	51.3	87	76
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		2.68 M	0.581 M	3.15 M	<0.1 #	<0.2 M	<0.2 #
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	0.0532	<0.01	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0435	0.0526	0.161	<0.01	0.0549	0.0418
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0498	0.092	0.557	<0.01	0.0373	0.0237
Aliphatics >C10-C12	<0.01 mg/kg	TM089		1.52	0.209	1.19	<0.01	0.0461	0.0203
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.84	1.31	<0.1	5.78	2.61	2.01
Aliphatics >C16-C21	<0.1 mg/kg	TM173		15.8	2.88	<0.1	23.7	39.4	12.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		79.5	14.7	2.43	94.5	77.6	45.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		27.5	1.14	<0.1	43.7	16.7	14.2
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		126	20.1	2.43	168	136	73.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	<0.02	0.0213	<0.01	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	<0.01	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0329	0.0613	0.371	<0.01	0.0253	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		1.02	0.139	0.793	<0.01	0.0307	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.92	0.53	<0.1	6.88	10.1	4.05
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.26	1.63	<0.1	28.9	114	29.6
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		71.8	16.1	4.96	133	292	93.2
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		43	3.55	5.54	79.5	84.9	29.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		18	1.16	2.43	33.5	28.5	10.2
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		126	21.8	10.5	249	501	156
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		254	42.4	16.1	417	637	230

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E1V	4E-F8	4E-F8	4E-F8V		
			Depth (m)	2.50 - 2.50	0.50 - 0.50	0.90 - 0.90	1.50 - 1.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018		
			SDG Ref	181102-43	181102-43	181102-43	181102-43		
			Lab Sample No.(s)	18654079	18654103	18654109	18654114		
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		101	101	106	95		
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 M	1.08 M	3.4 M	1.11 M		
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02	<0.02	<0.02	0.0354		
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02	0.0645	0.0596	0.128		
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02	0.123	0.565	0.365		
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02	0.421	0.965	0.199		
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.59	<0.1	2.78	<0.1		
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	5.14	9.32	<0.1		
Aliphatics >C21-C35	<0.1 mg/kg	TM173		2.43	68.4	64.4	0.225		
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	14.2	14	<0.1		
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		3.02	87.8	90.5	0.225		
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02	0.0333	0.218	<0.02		
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02	0.0688	0.561	<0.02		
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02	0.0817	0.377	0.244		
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02	0.282	0.644	0.132		
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	2.3	6.74	<0.1		
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.299	28.9	30.6	0.5		
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		5.4	153	135	4.84		
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.76	56.1	55.2	3.24		
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	19.2	18.8	1.07		
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		7.46	240	228	8.58		
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		10.5	329	322	9.91		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7
			Depth (m)	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18653991	18653998	18654006	18654016	18654023	18654030
			AGS Reference						
Dibromofluoromethane**	%	TM116		107	105	105	106	104	101
Toluene-d8**	%	TM116		95.8	91.8	99.9	99.4	99.7	99
4-Bromofluorobenzene**	%	TM116		89.5	86.2	98.8	97.5	97.9	91.5
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 #	<0.1 M	<0.1 #	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 #	<0.09 M	<0.09 #	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	0.135 #	<0.07 M	<0.07 #	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	0.102 #	<0.04 M	<0.04 #	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	0.211 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	0.232 #	<0.1 M	<0.1 #	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 #	<0.13 M	<0.13 #	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	0.68	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C7	4E-C8	4E-C8	4E-C7V	4E-D7	4E-D8
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654036	18653975	18654060	18654042	18654118	18654083
			AGS Reference						
Dibromofluoromethane**	%	TM116		102	95.6	104	103	111	101
Toluene-d8**	%	TM116		98.9	95.5	98.1	98.8	98.6	98.6
4-Bromofluorobenzene**	%	TM116		92.2	79	94.1	95	91.9	90
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.01 #	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.009 #	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.007 #	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.004 #	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.01 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.01 #	<0.1 M	<0.1 M	<0.1 M
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 #	<0.13 M	<0.13 M	<0.13 M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.04	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1
			Depth (m)	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018	01/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018	02/11/2018
			SDG Ref	181102-43	181102-43	181102-43	181102-43	181102-43	181102-43
			Lab Sample No.(s)	18654090	18653985	18654098	18654049	18654065	18654071
			AGS Reference						
Dibromofluoromethane**	%	TM116		109	112	110	97.8	107	99.7
Toluene-d8**	%	TM116		95.6	99.3	99.9	97	96	97.9
4-Bromofluorobenzene**	%	TM116		92.6	97.5	97.9	81.6	90	87.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 #
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 #
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 #
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 #
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	1.15 M	<0.13 M	0.258 M	<0.13 #
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-E1V	4E-F8	4E-F8	4E-F8V		
			Depth (m)	2.50 - 2.50	0.50 - 0.50	0.90 - 0.90	1.50 - 1.50		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	01/11/2018	01/11/2018	01/11/2018	01/11/2018		
			Sample Time	00:00	00:00	00:00	00:00		
			Date Received	02/11/2018	02/11/2018	02/11/2018	02/11/2018		
			SDG Ref	181102-43	181102-43	181102-43	181102-43		
			Lab Sample No.(s)	18654079	18654103	18654109	18654114		
			AGS Reference						
Dibromofluoromethane**	%	TM116		103	101	103	103		
Toluene-d8**	%	TM116		101	99.3	99.4	100		
4-Bromofluorobenzene**	%	TM116		98.7	96.9	99.3	99.1		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M		
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	0.121 M	<0.07 M		
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M		
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #		
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M		
Naphthalene	<0.013 mg/kg	TM116		<0.13 M	<0.13 M	<0.13 M	<0.13 M		
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4		

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-A7 0.90 - 0.90 SOLID 01/11/2018 00:00:00 07/11/2018 07:59:42 181102-43 18653998 TM048	08/11/2018	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-B7 0.50 - 0.50 SOLID 01/11/2018 00:00:00 03/11/2018 10:37:54 181102-43 18654016 TM048	14/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C7 0.50 - 0.50 SOLID 01/11/2018 00:00:00 03/11/2018 10:41:52 181102-43 18654030 TM048	13/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C8 0.50 - 0.50 SOLID 01/11/2018 00:00:00 02/11/2018 17:13:18 181102-43 18653975 TM048	14/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D7 0.50 - 0.50 SOLID 01/11/2018 00:00:00 07/11/2018 07:55:52 181102-43 18654118 TM048	09/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D8 0.90 - 0.90 SOLID 01/11/2018 00:00:00 03/11/2018 07:52:58 181102-43 18654090 TM048	13/11/2018	Lucy Caroe	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181102-43 **Client Reference:** **Report Number:** 482241
Location: Llanwern **Order Number:** LLA505 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E1 0.50 - 0.50 SOLID 01/11/2018 00:00:00 02/11/2018 17:15:31 181102-43 18654049 TM048	14/11/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E1 2.00 - 2.00 SOLID 01/11/2018 00:00:00 03/11/2018 09:14:56 181102-43 18654071 TM048	09/11/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-F8 0.50 - 0.50 SOLID 01/11/2018 00:00:00 07/11/2018 07:53:21 181102-43 18654103 TM048	09/11/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Asbestos Quantification - Full

		Additional Asbestos Components (Using TM048)	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation - %	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D8 0.90 - 0.90 SOLID 01/11/2018 00:00:00 03/11/2018 07:52:36 181102-43 18654090 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653975
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00128	<0.0005	0.0128	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000637	<0.0003	0.00637	<0.003	-	-	-
Lead	0.000216	<0.0002	0.00216	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000721	<0.0004	0.00721	<0.004	-	-	-
Selenium	0.00139	<0.001	0.0139	<0.01	-	-	-
Vanadium	0.00756	<0.001	0.0756	<0.01	-	-	-
Zinc	0.0192	<0.001	0.192	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.244	<0.019	2.44	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000176	<0.00001	0.000176	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000931	<0.000005	0.0000931	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000691	<0.000005	0.0000691	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000237	<0.000002	0.0000237	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	9.03
Conductivity (µS/cm)	128.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.87
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.7
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653975
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	9.03
Conductivity (µS/cm)	128.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

22/11/2018 17:10:59

17:10:21 22/11/2018

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653991
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-A7
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00195	<0.0005	0.0195	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0015	<0.001	0.015	<0.01	-	-	-
Copper	0.00216	<0.0003	0.0216	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00206	<0.001	0.0206	<0.01	-	-	-
Vanadium	0.151	<0.001	1.51	<0.01	-	-	-
Zinc	0.00232	<0.001	0.0232	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00011	<0.00001	0.0011	<0.0001	-	-	-
Acenaphthene by GCMS	0.000136	<0.000005	0.00136	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000459	<0.000005	0.000459	<0.00005	-	-	-
Fluoranthene by GCMS	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Anthracene by GCMS	0.000038	<0.000005	0.00038	<0.00005	-	-	-
Phenanthrene by GCMS	0.000224	<0.000005	0.00224	<0.00005	-	-	-
Fluorene by GCMS	0.000248	<0.000005	0.00248	<0.00005	-	-	-
Chrysene by GCMS	0.0000149	<0.000005	0.000149	<0.00005	-	-	-
Pyrene by GCMS	0.000128	<0.000005	0.00128	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000931	<0.000005	0.0000931	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000129	<0.000002	0.000129	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000097	<0.000005	0.000097	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000846	<0.000005	0.0000846	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00115	<0.000082	0.0115	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.137	<0.05	1.37	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.25
Conductivity (µS/cm)	202.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.6
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653991
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-A7
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.014	<0.01	0.14	<0.1	-	-	-
Aliphatics >C10-C12	0.061	<0.01	0.61	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.041	<0.01	0.41	<0.1	-	-	-
Aromatics >EC12-EC16	0.064	<0.01	0.64	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.064	<0.01	0.64	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.202	<0.01	2.02	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.25
Conductivity (µS/cm)	202.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653998
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-A7
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.388	<0.2	3.88	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000129	<0.00001	0.000129	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00154	<0.001	0.0154	<0.01	-	-	-
Copper	0.00249	<0.0003	0.0249	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00105	<0.001	0.0105	<0.01	-	-	-
Vanadium	0.0554	<0.001	0.554	<0.01	-	-	-
Zinc	0.00498	<0.001	0.0498	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000552	<0.00001	0.00552	<0.0001	-	-	-
Acenaphthene by GCMS	0.000269	<0.000005	0.00269	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000594	<0.000005	0.000594	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000549	<0.000005	0.000549	<0.00005	-	-	-
Anthracene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Phenanthrene by GCMS	0.000492	<0.000005	0.00492	<0.00005	-	-	-
Fluorene by GCMS	0.000496	<0.000005	0.00496	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000108	<0.000005	0.00108	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00205	<0.000082	0.0205	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	5.79	<0.05	57.9	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.066	<0.01	0.66	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.19
Conductivity (µS/cm)	625.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18653998
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-A7
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.863	<0.01	8.63	<0.1	-	-	-
Aliphatics >C10-C12	2.56	<0.01	25.6	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.03	<0.01	0.3	<0.1	-	-	-
Total Aliphatics >C12-C35	0.03	<0.01	0.3	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.591	<0.01	5.91	<0.1	-	-	-
Aromatics >EC10-EC12	1.71	<0.01	17.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.093	<0.01	0.93	<0.1	-	-	-
Aromatics >EC16-EC21	0.028	<0.01	0.28	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.121	<0.01	1.21	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	5.94	<0.01	59.4	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	0.013	<0.003	0.13	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.013	<0.011	0.13	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.03	<0.01	0.3	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.19
Conductivity (µS/cm)	625.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654016
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-B7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00266	<0.0005	0.0266	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0103	<0.001	0.103	<0.01	-	-	-
Copper	0.00444	<0.0003	0.0444	<0.003	-	-	-
Lead	0.00572	<0.0002	0.0572	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000651	<0.0004	0.00651	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0109	<0.001	0.109	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000244	<0.0001	0.00244	<0.001	-	-	-
Acenaphthene by GCMS	0.000143	<0.00005	0.00143	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	0.000561	<0.00005	0.00561	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	0.00064	<0.00005	0.0064	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	0.000145	<0.00005	0.00145	<0.0005	-	-	-
Pyrene by GCMS	0.000571	<0.00005	0.00571	<0.0005	-	-	-
Benz(a)anthracene by GCMS	0.0000958	<0.00005	0.000958	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000999	<0.00005	0.000999	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000915	<0.00005	0.000915	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000682	<0.00005	0.000682	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	0.00266	<0.00082	0.0266	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	12.18
Conductivity (µS/cm)	7,190.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654016
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-B7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	12.18
Conductivity (µS/cm)	7,190.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654030
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000416	<0.00001	0.000416	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00132	<0.0005	0.0132	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00103	<0.0003	0.0103	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00354	<0.001	0.0354	<0.01	-	-	-
Vanadium	0.231	<0.001	2.31	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	325.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654030
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	10.79
Conductivity (µS/cm)	325.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654036
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0016	<0.0005	0.016	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00225	<0.001	0.0225	<0.01	-	-	-
Copper	0.0038	<0.0003	0.038	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000623	<0.0004	0.00623	<0.004	-	-	-
Selenium	0.00127	<0.001	0.0127	<0.01	-	-	-
Vanadium	0.0247	<0.001	0.247	<0.01	-	-	-
Zinc	0.00188	<0.001	0.0188	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Acenaphthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Acenaphthylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Phenanthrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Fluorene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Chrysene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benz(a)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(a)pyrene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Benzo(ghi)perylene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
PAH 16 EPA Total by GCMS	<0.00082	<0.00082	<0.0082	<0.0082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	489.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654036
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C7
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Nov-2018
pH (pH Units)	11.37
Conductivity (µS/cm)	489.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654049
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.496	<0.2	4.96	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00608	<0.0005	0.0608	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00371	<0.0003	0.0371	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000426	<0.0004	0.00426	<0.004	-	-	-
Selenium	0.00227	<0.001	0.0227	<0.01	-	-	-
Vanadium	0.0478	<0.001	0.478	<0.01	-	-	-
Zinc	0.00292	<0.001	0.0292	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000155	<0.00001	0.000155	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000749	<0.000005	0.0000749	<0.00005	-	-	-
Fluoranthene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Anthracene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000657	<0.000005	0.000657	<0.00005	-	-	-
Fluorene by GCMS	0.00000704	<0.000005	0.0000704	<0.00005	-	-	-
Chrysene by GCMS	0.0000732	<0.000005	0.000732	<0.00005	-	-	-
Pyrene by GCMS	0.000104	<0.000005	0.00104	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000044	<0.000005	0.00044	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000119	<0.000005	0.00119	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000556	<0.000005	0.000556	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000613	<0.000002	0.000613	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000519	<0.000005	0.000519	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000489	<0.000005	0.000489	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000811	<0.000082	0.00811	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	8.54
Conductivity (µS/cm)	194.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654049
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	0.014	<0.01	0.14	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	0.014	<0.01	0.14	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.014	<0.01	0.14	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.014	<0.01	0.14	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	8.54
Conductivity (µS/cm)	194.00
Temperature (°C)	18.90
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654060
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000607	<0.0005	0.00607	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000595	<0.0003	0.00595	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00305	<0.001	0.0305	<0.01	-	-	-
Vanadium	0.104	<0.001	1.04	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000213	<0.00001	0.000213	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000779	<0.000005	0.0000779	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000018	<0.000005	0.00018	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000206	<0.000005	0.000206	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.10
Conductivity (µS/cm)	372.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654060
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-C8
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.10
Conductivity (µS/cm)	372.00
Temperature (°C)	19.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654065
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000114	<0.00001	0.000114	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00146	<0.0005	0.0146	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00224	<0.001	0.0224	<0.01	-	-	-
Copper	0.00547	<0.0003	0.0547	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.001	<0.0004	0.01	<0.004	-	-	-
Selenium	0.00215	<0.001	0.0215	<0.01	-	-	-
Vanadium	0.0604	<0.001	0.604	<0.01	-	-	-
Zinc	0.00205	<0.001	0.0205	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000909	<0.00001	0.00909	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000404	<0.000005	0.000404	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Fluoranthene by GCMS	0.000619	<0.000005	0.00619	<0.00005	-	-	-
Anthracene by GCMS	0.000151	<0.000005	0.00151	<0.00005	-	-	-
Phenanthrene by GCMS	0.00144	<0.000005	0.0144	<0.00005	-	-	-
Fluorene by GCMS	0.000256	<0.000005	0.00256	<0.00005	-	-	-
Chrysene by GCMS	0.0000314	<0.000005	0.000314	<0.00005	-	-	-
Pyrene by GCMS	0.000505	<0.000005	0.00505	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000274	<0.000005	0.000274	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000112	<0.000005	0.000112	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000556	<0.000005	0.0000556	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000432	<0.000002	0.0000432	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00413	<0.000082	0.0413	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	439.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.77
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.1
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654065
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	11.01
Conductivity (µS/cm)	439.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654071
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.76	<0.2	7.6	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00112	<0.0005	0.0112	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00472	<0.0003	0.0472	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00116	<0.0004	0.0116	<0.004	-	-	-
Selenium	0.00151	<0.001	0.0151	<0.01	-	-	-
Vanadium	0.0572	<0.001	0.572	<0.01	-	-	-
Zinc	0.00365	<0.001	0.0365	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000645	<0.00001	0.00645	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000998	<0.000005	0.000998	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000642	<0.000005	0.00642	<0.00005	-	-	-
Fluoranthene by GCMS	0.00145	<0.000005	0.0145	<0.00005	-	-	-
Anthracene by GCMS	0.000233	<0.000005	0.00233	<0.00005	-	-	-
Phenanthrene by GCMS	0.00223	<0.000005	0.0223	<0.00005	-	-	-
Fluorene by GCMS	0.000762	<0.000005	0.00762	<0.00005	-	-	-
Chrysene by GCMS	0.0000352	<0.000005	0.000352	<0.00005	-	-	-
Pyrene by GCMS	0.000758	<0.000005	0.00758	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000251	<0.000005	0.000251	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00688	<0.000082	0.0688	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.15
Conductivity (µS/cm)	542.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654071
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-E1
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.15
Conductivity (µS/cm)	542.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654083
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00131	<0.0005	0.0131	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00418	<0.001	0.0418	<0.01	-	-	-
Copper	0.000417	<0.0003	0.00417	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00162	<0.001	0.0162	<0.01	-	-	-
Vanadium	0.0547	<0.001	0.547	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000533	<0.000005	0.0000533	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000987	<0.000005	0.0000987	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000673	<0.000005	0.0000673	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.66
Conductivity (µS/cm)	238.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654083
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	10.66
Conductivity (µS/cm)	238.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654090
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D8
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0225	<0.001	0.225	<0.01	-	-	-
Copper	0.00277	<0.0003	0.0277	<0.003	-	-	-
Lead	0.00191	<0.0002	0.0191	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00191	<0.001	0.0191	<0.01	-	-	-
Zinc	0.00256	<0.001	0.0256	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000942	<0.00001	0.000942	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000223	<0.000005	0.00223	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00021	<0.000005	0.0021	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000671	<0.000082	0.00671	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,740.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.04
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.3
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654090
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D8
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.74
Conductivity (µS/cm)	1,740.00
Temperature (°C)	18.80
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654103
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-F8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00149	<0.0005	0.0149	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00337	<0.001	0.0337	<0.01	-	-	-
Copper	0.00598	<0.0003	0.0598	<0.003	-	-	-
Lead	0.00132	<0.0002	0.0132	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00105	<0.0004	0.0105	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00104	<0.001	0.0104	<0.01	-	-	-
Zinc	0.00364	<0.001	0.0364	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000339	<0.00001	0.00339	<0.0001	-	-	-
Acenaphthene by GCMS	0.000368	<0.000005	0.00368	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000435	<0.000005	0.000435	<0.00005	-	-	-
Fluoranthene by GCMS	0.0021	<0.000005	0.021	<0.00005	-	-	-
Anthracene by GCMS	0.000301	<0.000005	0.00301	<0.00005	-	-	-
Phenanthrene by GCMS	0.00502	<0.000005	0.0502	<0.00005	-	-	-
Fluorene by GCMS	0.000041	<0.000005	0.00041	<0.00005	-	-	-
Chrysene by GCMS	0.000082	<0.000005	0.00082	<0.00005	-	-	-
Pyrene by GCMS	0.00159	<0.000005	0.0159	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000673	<0.000005	0.000673	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000283	<0.000005	0.000283	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000905	<0.000005	0.0000905	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000813	<0.000002	0.0000813	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.01	<0.000082	0.1	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.27
Conductivity (µS/cm)	418.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654103
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-F8
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	12.27
Conductivity (µS/cm)	418.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654109
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-F8
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	0.461	<0.2	4.61	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00105	<0.0005	0.0105	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00485	<0.001	0.0485	<0.01	-	-	-
Copper	0.00417	<0.0003	0.0417	<0.003	-	-	-
Lead	0.000815	<0.0002	0.00815	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00682	<0.001	0.0682	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000638	<0.00001	0.00638	<0.0001	-	-	-
Acenaphthene by GCMS	0.000451	<0.000005	0.00451	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000119	<0.000005	0.00119	<0.00005	-	-	-
Fluoranthene by GCMS	0.00607	<0.000005	0.0607	<0.00005	-	-	-
Anthracene by GCMS	0.000617	<0.000005	0.00617	<0.00005	-	-	-
Phenanthrene by GCMS	0.0104	<0.000005	0.104	<0.00005	-	-	-
Fluorene by GCMS	0.00015	<0.000005	0.0015	<0.00005	-	-	-
Chrysene by GCMS	0.000429	<0.000005	0.00429	<0.00005	-	-	-
Pyrene by GCMS	0.00461	<0.000005	0.0461	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000342	<0.000005	0.00342	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000794	<0.000005	0.000794	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000464	<0.000005	0.000464	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000024	<0.000002	0.00024	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0239	<0.000082	0.239	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.91
Conductivity (µS/cm)	283.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.9
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654109
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-F8
Depth (m)	0.90 - 0.90

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.032	<0.01	0.32	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.032	<0.01	0.32	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.049	<0.01	0.49	<0.1	-	-	-
Toluene by GC	0.007	<0.004	0.07	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	03-Nov-2018
pH (pH Units)	11.91
Conductivity (µS/cm)	283.00
Temperature (°C)	19.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654118
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00234	<0.0005	0.0234	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00181	<0.0003	0.0181	<0.003	-	-	-
Lead	0.000259	<0.0002	0.00259	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000476	<0.0004	0.00476	<0.004	-	-	-
Selenium	0.00326	<0.001	0.0326	<0.01	-	-	-
Vanadium	0.0631	<0.001	0.631	<0.01	-	-	-
Zinc	0.00166	<0.001	0.0166	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.589	<0.019	5.89	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000249	<0.00001	0.000249	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000026	<0.000005	0.00026	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000613	<0.000005	0.0000613	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0000941	<0.000082	0.000941	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.51
Conductivity (µS/cm)	232.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181102-43
Lab Sample Number(s)	18654118
Sampled Date	01-Nov-2018
Customer Sample Ref.	4E-D7
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	08-Nov-2018
pH (pH Units)	10.51
Conductivity (µS/cm)	232.00
Temperature (°C)	18.70
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

22/11/2018 17:10:59

17:10:21 22/11/2018

Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	18653991	18653998	18654006	18654016	18654023	18654030	18654036	18653975	18654060	18654042
Customer Sample Ref.	4E-A7	4E-A7	4E-A7V	4E-B7	4E-B7V	4E-C7	4E-C7	4E-C8	4E-C8	4E-C7V
AGS Ref.										
Depth	0.40 - 0.40	0.90 - 0.90	2.10 - 2.10	0.50 - 0.50	1.60 - 1.60	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.80 - 1.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		14-Nov-2018		15-Nov-2018		16-Nov-2018		14-Nov-2018		
Ammoniacal Nitrogen	15-Nov-2018	15-Nov-2018		15-Nov-2018		15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	
Ammonium Soil by Titration	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
Anions by Kone (soil)		15-Nov-2018		15-Nov-2018		09-Nov-2018		15-Nov-2018		
Asbestos ID in Solid Samples		08-Nov-2018		14-Nov-2018		13-Nov-2018		14-Nov-2018		
CEN 10:1 Leachate (1 Stage)	08-Nov-2018	03-Nov-2018		07-Nov-2018		07-Nov-2018	07-Nov-2018	03-Nov-2018	03-Nov-2018	
CEN Readings	13-Nov-2018	10-Nov-2018		09-Nov-2018		09-Nov-2018	09-Nov-2018	10-Nov-2018	10-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	16-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	15-Nov-2018	15-Nov-2018		15-Nov-2018		15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	14-Nov-2018	13-Nov-2018		13-Nov-2018		12-Nov-2018	13-Nov-2018	14-Nov-2018	15-Nov-2018	
EPH CWG (Aliphatic) GC (S)	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	16-Nov-2018	16-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	14-Nov-2018	13-Nov-2018		13-Nov-2018		12-Nov-2018	13-Nov-2018	14-Nov-2018	15-Nov-2018	
EPH CWG (Aromatic) GC (S)	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	08-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (S)	12-Nov-2018	13-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	12-Nov-2018	12-Nov-2018	10-Nov-2018
GRO by GC-FID (W)	13-Nov-2018	12-Nov-2018		12-Nov-2018		12-Nov-2018	09-Nov-2018	12-Nov-2018	12-Nov-2018	
Mercury Dissolved	16-Nov-2018	16-Nov-2018		16-Nov-2018		16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	
Metals in solid samples by OES	16-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	12-Nov-2018	14-Nov-2018	19-Nov-2018	15-Nov-2018
PAH by GCMS	08-Nov-2018	08-Nov-2018	07-Nov-2018	08-Nov-2018	07-Nov-2018	09-Nov-2018	16-Nov-2018	08-Nov-2018	09-Nov-2018	07-Nov-2018
PAH Spec MS - Aqueous (W)	14-Nov-2018	14-Nov-2018		12-Nov-2018		09-Nov-2018	12-Nov-2018	14-Nov-2018	13-Nov-2018	
pH	14-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	13-Nov-2018	13-Nov-2018
pH Value	14-Nov-2018	13-Nov-2018		14-Nov-2018		14-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	
Phenols by HPLC (S)	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	12-Nov-2018	13-Nov-2018	14-Nov-2018	06-Nov-2018	14-Nov-2018	12-Nov-2018
Sample description	07-Nov-2018	02-Nov-2018	02-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	03-Nov-2018	02-Nov-2018	02-Nov-2018	03-Nov-2018
Total Organic Carbon	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018
Total Sulphate		07-Nov-2018		13-Nov-2018		12-Nov-2018		13-Nov-2018		
Total Sulphur		13-Nov-2018		07-Nov-2018		14-Nov-2018		07-Nov-2018		
TPH CWG (W)	14-Nov-2018	13-Nov-2018		13-Nov-2018		12-Nov-2018	13-Nov-2018	14-Nov-2018	15-Nov-2018	
TPH CWG GC (S)	12-Nov-2018	13-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	10-Nov-2018	12-Nov-2018	16-Nov-2018	16-Nov-2018
VOC MS (S)	14-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	13-Nov-2018	12-Nov-2018

Lab Sample No(s)	18654118	18654083	18654090	18653985	18654098	18654049	18654065	18654071	18654079	18654103
Customer Sample Ref.	4E-D7	4E-D8	4E-D8	4E-D7V	4E-D8V	4E-E1	4E-E1	4E-E1	4E-E1V	4E-F8
AGS Ref.										
Depth	0.50 - 0.50	0.50 - 0.50	0.90 - 0.90	1.90 - 1.90	1.70 - 1.70	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	16-Nov-2018		16-Nov-2018			19-Nov-2018		14-Nov-2018		16-Nov-2018
Ammoniacal Nitrogen	15-Nov-2018	15-Nov-2018	15-Nov-2018			15-Nov-2018	15-Nov-2018	15-Nov-2018		15-Nov-2018
Ammonium Soil by Titration	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
Anions by Kone (soil)	09-Nov-2018		15-Nov-2018			20-Nov-2018		15-Nov-2018		15-Nov-2018
Asbestos ID in Solid Samples	09-Nov-2018		13-Nov-2018			14-Nov-2018		09-Nov-2018		09-Nov-2018
Asbestos Quantification - Full			16-Nov-2018							
CEN 10:1 Leachate (1 Stage)	08-Nov-2018	03-Nov-2018	03-Nov-2018			08-Nov-2018	08-Nov-2018	03-Nov-2018		03-Nov-2018
CEN Readings	10-Nov-2018	10-Nov-2018	10-Nov-2018			13-Nov-2018	10-Nov-2018	10-Nov-2018		10-Nov-2018
Cyanide Comp/Free/Total/Thiocyanate	15-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	15-Nov-2018	15-Nov-2018	13-Nov-2018			15-Nov-2018	15-Nov-2018	15-Nov-2018		15-Nov-2018
EPH CWG (Aliphatic) Aqueous GC (W)	14-Nov-2018	14-Nov-2018	14-Nov-2018			14-Nov-2018	15-Nov-2018	14-Nov-2018		14-Nov-2018
EPH CWG (Aliphatic) GC (S)	16-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	16-Nov-2018	16-Nov-2018	09-Nov-2018	16-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	14-Nov-2018	14-Nov-2018	14-Nov-2018			14-Nov-2018	15-Nov-2018	14-Nov-2018		14-Nov-2018
EPH CWG (Aromatic) GC (S)	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018	09-Nov-2018
GRO by GC-FID (S)	12-Nov-2018	10-Nov-2018	10-Nov-2018	12-Nov-2018	10-Nov-2018	12-Nov-2018	10-Nov-2018	10-Nov-2018	13-Nov-2018	10-Nov-2018
GRO by GC-FID (W)	12-Nov-2018	12-Nov-2018	12-Nov-2018			13-Nov-2018	14-Nov-2018	12-Nov-2018		12-Nov-2018
Mercury Dissolved	16-Nov-2018	16-Nov-2018	16-Nov-2018			16-Nov-2018	16-Nov-2018	16-Nov-2018		16-Nov-2018
Metals in solid samples by OES	15-Nov-2018	19-Nov-2018	15-Nov-2018	14-Nov-2018	16-Nov-2018	20-Nov-2018	19-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018
PAH by GCMS	12-Nov-2018	08-Nov-2018	08-Nov-2018	08-Nov-2018	07-Nov-2018	08-Nov-2018	07-Nov-2018	09-Nov-2018	08-Nov-2018	08-Nov-2018
PAH Spec MS - Aqueous (W)	14-Nov-2018	14-Nov-2018	14-Nov-2018			13-Nov-2018	13-Nov-2018	14-Nov-2018		14-Nov-2018
pH	14-Nov-2018	13-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018	13-Nov-2018	14-Nov-2018	14-Nov-2018	14-Nov-2018
pH Value	14-Nov-2018	14-Nov-2018	12-Nov-2018			13-Nov-2018	14-Nov-2018	12-Nov-2018		14-Nov-2018
Phenols by HPLC (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	15-Nov-2018	13-Nov-2018	14-Nov-2018	12-Nov-2018	14-Nov-2018	12-Nov-2018	14-Nov-2018
Sample description	03-Nov-2018	02-Nov-2018	02-Nov-2018	07-Nov-2018	02-Nov-2018	03-Nov-2018	03-Nov-2018	02-Nov-2018	07-Nov-2018	02-Nov-2018
Total Organic Carbon	16-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	15-Nov-2018	16-Nov-2018	15-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
Total Sulphate	12-Nov-2018		13-Nov-2018			16-Nov-2018		13-Nov-2018		13-Nov-2018
Total Sulphur	13-Nov-2018		07-Nov-2018			16-Nov-2018		07-Nov-2018		07-Nov-2018
TPH CWG (W)	14-Nov-2018	14-Nov-2018	14-Nov-2018			14-Nov-2018	15-Nov-2018	14-Nov-2018		14-Nov-2018
TPH CWG GC (S)	16-Nov-2018	10-Nov-2018	10-Nov-2018	12-Nov-2018	10-Nov-2018	12-Nov-2018	16-Nov-2018	16-Nov-2018	13-Nov-2018	16-Nov-2018
VOC MS (S)	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	14-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018	12-Nov-2018

Validated

CERTIFICATE OF ANALYSIS

SDG:	181102-43	**Client Reference:**		**Report Number:**	482241
Location:	Llanwern	**Order Number:**	LLA505	**Superseded Report:**	

Lab Sample No(s)	18654109	18654114
Customer Sample Ref.	4E-F8	4E-F8V
AGS Ref.		
Depth	0.90 - 0.90	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)
Ammoniacal Nitrogen	15-Nov-2018	
Ammonium Soil by Titration	16-Nov-2018	16-Nov-2018
CEN 10:1 Leachate (1 Stage)	03-Nov-2018	
CEN Readings	10-Nov-2018	
Cyanide Comp/Free/Total/Thiocyanate	16-Nov-2018	15-Nov-2018
Dissolved Metals by ICP-MS	15-Nov-2018	
EPH CWG (Aliphatic) Aqueous GC (W)	15-Nov-2018	
EPH CWG (Aliphatic) GC (S)	09-Nov-2018	09-Nov-2018
EPH CWG (Aromatic) Aqueous GC (W)	15-Nov-2018	
EPH CWG (Aromatic) GC (S)	09-Nov-2018	09-Nov-2018
GRO by GC-FID (S)	10-Nov-2018	10-Nov-2018
GRO by GC-FID (W)	12-Nov-2018	
Mercury Dissolved	16-Nov-2018	
Metals in solid samples by OES	16-Nov-2018	16-Nov-2018
PAH by GCMS	08-Nov-2018	08-Nov-2018
PAH Spec MS - Aqueous (W)	13-Nov-2018	
pH	14-Nov-2018	14-Nov-2018
pH Value	13-Nov-2018	
Phenols by HPLC (S)	13-Nov-2018	13-Nov-2018
Sample description	02-Nov-2018	07-Nov-2018
Total Organic Carbon	16-Nov-2018	16-Nov-2018
TPH CWG (W)	15-Nov-2018	
TPH CWG GC (S)	10-Nov-2018	10-Nov-2018
VOC MS (S)	12-Nov-2018	12-Nov-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date of report Generation:	16 January 2019
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181128-38
Your Reference:	
Location:	Llanwern
Report No:	488792

This report has been revised and directly supersedes 487410 in its entirety.

We received 14 samples on Wednesday November 28, 2018 and 14 of these samples were scheduled for analysis which was completed on Wednesday January 16, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan
Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18833052	4E-C10		0.50 - 0.50	26/11/2018
18833057	4E-C10		1.00 - 1.00	26/11/2018
18833063	4E-C10		2.00 - 2.00	26/11/2018
18833070	4E-C10-V		2.50 - 2.50	26/11/2018
18833100	4E-D10		0.50 - 0.50	26/11/2018
18833106	4E-D10		1.00 - 1.00	26/11/2018
18833111	4E-D10		1.70 - 1.70	26/11/2018
18833046	4E-D10-V		2.80 - 2.80	26/11/2018
18833085	4E-E10		0.40 - 0.40	26/11/2018
18833091	4E-E10		1.50 - 1.50	26/11/2018
18833096	4E-E10-V		2.50 - 2.50	26/11/2018
18833042	4E-F10		0.40 - 0.40	26/11/2018
18833074	4E-F10		1.00 - 1.00	26/11/2018
18833078	4E-F10-V		2.50 - 2.50	26/11/2018

Maximum Sample/Coolbox Temperature (°C) : **7.8**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

	Lab Sample No(s)		18833111
	Customer Sample Reference		4E-D10
	AGS Reference		
	Depth (m)		1.70 - 1.70
	Container		
	Sample Type		GW
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 2	X

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
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DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18833052			18833057			18833063			18833070			18833100			18833106			18833111
Customer Sample Reference			4E-C10			4E-C10			4E-C10			4E-C10-V			4E-D10			4E-D10			4E-D10
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			2.50 - 2.50			0.50 - 0.50			1.00 - 1.00			1.70 - 1.70
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	0.5l glass bottle (ALE227)	1lplastic (ALE221)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	GW	GW
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 7		X						X								X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 10	X			X			X					X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 13		X			X			X		X			X			X			
Anions by Kone (soil)	All	NDPs: 0 Tests: 7		X						X								X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 7	X						X								X				
CEN Readings	All	NDPs: 0 Tests: 9	X			X			X					X			X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 23	X	X		X	X		X	X		X		X	X		X	X			X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 9	X			X			X					X			X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8	X			X			X								X				
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 1																		X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 13		X			X			X		X			X			X			
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8	X			X			X								X				
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 1																		X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 13		X			X			X		X			X			X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 13			X			X			X		X			X			X		

18833078	4E-F10-V		2.50 - 2.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S				x				x					x				x		
18833074	4E-F10		1.00 - 1.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S	x			x	x			x					x				x		
				1kg TUB	S		x				x	x	x	x	x				x				
18833042	4E-F10		0.40 - 0.40	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S	x			x	x			x					x				x		
				1kg TUB	S		x				x	x	x	x	x				x				
18833096	4E-E10-V		2.50 - 2.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S				x				x					x				x		
18833091	4E-E10		1.50 - 1.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S	x			x	x			x					x				x		
				1kg TUB	S		x				x	x	x	x	x				x				
18833085	4E-E10		0.40 - 0.40	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S	x			x	x			x					x				x		
				1kg TUB	S		x				x	x	x	x	x				x				
18833046	4E-D10-V		2.80 - 2.80	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S				x				x					x				x		
18833111	4E-D10		1.70 - 1.70	Vial (ALE297)	GW																		

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | | |

| 18833078 | 4E-F10-V | | 2.50 - 2.50 | 60g VOC (ALE215) | S | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18833052			18833057			18833063			18833070		18833100			18833106			18833111
Customer Sample Reference			4E-C10			4E-C10			4E-C10			4E-C10-V		4E-D10			4E-D10			4E-D10
AGS Reference																				
Depth (m)			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			2.50 - 2.50		0.50 - 0.50			1.00 - 1.00			1.70 - 1.70
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	0.5l glass bottle (ALE227)	1lplastic (ALE221)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	GW	GW
Total Sulphate	All	NDPs: 0 Tests: 7		X						X								X			
Total Sulphur	All	NDPs: 0 Tests: 7		X						X								X			
TPH CWG (W)	All	NDPs: 0 Tests: 8	X			X			X								X				
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 1																		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 13		X			X			X		X			X			X			
VOC MS (S)	All	NDPs: 0 Tests: 13			X			X			X		X			X			X		
VOC MS (W)	All	NDPs: 0 Tests: 1																			

| 18833078 | 4E-F10-V | | 2.50 - 2.50 | 60g VOC (ALE215) | S | | |

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18833052	4E-C10	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18833057	4E-C10	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18833063	4E-C10	2.00 - 2.00	Dark Brown	Sandy Loam	Vegetation	Stones
18833070	4E-C10-V	2.50 - 2.50	Dark Brown	Sandy Loam	Vegetation	Stones
18833100	4E-D10	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18833106	4E-D10	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18833046	4E-D10-V	2.80 - 2.80	Dark Brown	Sandy Loam	Vegetation	Stones
18833085	4E-E10	0.40 - 0.40	Dark Brown	Sandy Loam	Vegetation	Stones
18833091	4E-E10	1.50 - 1.50	Dark Brown	Sandy Loam	Vegetation	Stones
18833096	4E-E10-V	2.50 - 2.50	Dark Brown	Sandy Clay	Stones	Vegetation
18833042	4E-F10	0.40 - 0.40	Dark Brown	Sand	Vegetation	Stones
18833074	4E-F10	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18833078	4E-F10-V	2.50 - 2.50	Dark Brown	Sandy Loam	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833052	18833057	18833063	18833070	18833100	18833106
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.1	11	8.4	31	1.9	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	223 M	19.4 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.0983		0.524			0.22
Sulphate, Total potential	<0.06 %	TM132		0.295		1.57			0.66
Soil Organic Matter (SOM)	<0.35 %	TM132		9.79 #	3.9 #	2.67 #	4.91 #	2.47 #	3.45 #
pH	1 pH Units	TM133		10.5 M	8.39 M	10.1 M	7.84 M	11.4 M	10.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 ♦ M	<1 ♦ M	2.28 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Cyanide, Free	<1 mg/kg	TM153		<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Arsenic	<0.6 mg/kg	TM181		9.99 M	4.72 M	10 M	17.2 M	11 M	4.97 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	<0.2 M	0.269 M	0.562 M	0.281 M
Chromium	<0.9 mg/kg	TM181		267 M	3.69 M	10.3 M	33.9 M	137 M	24.5 M
Copper	<1.4 mg/kg	TM181		54.5 M	<1.4 M	56.5 M	15.9 M	19.8 M	6.71 M
Iron	<1000 mg/kg	TM181		179000 #	4940 #	170000 #	33200 #	144000 #	44100 #
Lead	<0.7 mg/kg	TM181		67.5 M	1.18 M	54.4 M	41.1 M	52.8 M	105 M
Manganese	<0.13 mg/kg	TM181		10600 M	3730 M	3660 M	563 M	11100 M	5400 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		34.9 M	1.66 M	32.6 M	33.4 M	22 M	6.8 M
Selenium	<1 mg/kg	TM181		<10 #	6.08 #	<10 #	1.7 #	7.47 #	3.59 #
Vanadium	<0.2 mg/kg	TM181		224 #	23.2 #	71 #	57.5 #	163 #	77.5 #
Zinc	<1.9 mg/kg	TM181		277 M	11.3 M	188 M	136 M	234 M	572 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.185		0.382			1.05
Calcium	<21 mg/kg	TM224		153000		75800			194000
Magnesium	<8 mg/kg	TM224		26200		9830			31100
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0853 M		0.475 M			0.102 M

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D10	4E-D10-V	4E-E10	4E-E10	4E-E10-V	4E-F10
			Depth (m)	1.70 - 1.70	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50	2.50 - 2.50	0.40 - 0.40
			Sample Type	Ground Water (GW)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833111	18833046	18833085	18833091	18833096	18833042
			AGS Reference						
Ammoniacal Nitrogen as NH3	<0.2 mg/l	TM099		0.908 2 #					
Naphthalene (diss.filt)	<0.01 µg/l	TM178		4520					
Acenaphthene (diss.filt)	<0.005 µg/l	TM178		138					
Acenaphthylene (diss.filt)	<0.005 µg/l	TM178		46.9					
Fluoranthene (diss.filt)	<0.005 µg/l	TM178		34.6					
Anthracene (diss.filt)	<0.005 µg/l	TM178		43.3					
Phenanthrene (diss.filt)	<0.005 µg/l	TM178		53.7					
Fluorene (diss.filt)	<0.005 µg/l	TM178		77.9					
Chrysene (diss.filt)	<0.005 µg/l	TM178		29.3					
Pyrene (diss.filt)	<0.005 µg/l	TM178		31.7					
Benzo(a)anthracene (diss.filt)	<0.005 µg/l	TM178		23.6					
Benzo(b)fluoranthene (diss.filt)	<0.005 µg/l	TM178		21					
Benzo(k)fluoranthene (diss.filt)	<0.005 µg/l	TM178		23.6					
Benzo(a)pyrene (diss.filt)	<0.002 µg/l	TM178		28.9					
Dibenzo(a,h)anthracene (diss.filt)	<0.005 µg/l	TM178		31.5					
Benzo(g,h,i)perylene (diss.filt)	<0.005 µg/l	TM178		24.3					
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.005 µg/l	TM178		26.2					
PAH Sum of EPA 16 detected (Diss filt)	<0.082 µg/l	TM178		5160					
Cyanide, Total	<0.05 mg/l	TM227		<0.05 2 #					
Cyanide, Free	<0.05 mg/l	TM227		<0.05 2 #					
Thiocyanate	<0.05 mg/l	TM227		<0.05 2 #					
Phenol	<0.002 mg/l	TM259		<0.002 2 #					
Cresols	<0.006 mg/l	TM259		<0.006 2 #					
Xylenols	<0.008 mg/l	TM259		<0.008 2 #					
Phenols, Total Detected monohydric	<0.016 mg/l	TM259		<0.016 2 #					
Cyanide, Total (low level)	<5 µg/l	TM279		24.1 2 #					
Cyanide, Free (low level)	<2.5 µg/l	TM279		<2.5 2 #					
Cyanide, Complex (low level)*	<5 µg/l	TM279		24.1 2					
Moisture Content Ratio (% of as received sample)	%	PM024			33	8.2	9.3	23	6.8
Exchangeable Ammonia as N	<12 mg/kg	TM024			227 M	<12 M	<12 M	126 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)			<0.01 M	<0.01 M	0.011 M	0.013 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)			<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)			<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D10	4E-D10-V	4E-E10	4E-E10	4E-E10-V	4E-F10
			Depth (m)	1.70 - 1.70	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50	2.50 - 2.50	0.40 - 0.40
			Sample Type	Ground Water (GW)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833111	18833046	18833085	18833091	18833096	18833042
			AGS Reference						
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)			<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.142	1.31 ♦		0.302
Sulphate, Total potential	<0.06 %	TM132				0.426	3.93		0.906
Soil Organic Matter (SOM)	<0.35 %	TM132			5.28 #	6.74 #	3.21 #	2.97 #	2.43 #
pH	1 pH Units	TM133			7.73 M	9.69 M	11.6 M	7.9 M	9.92 M
Cyanide, Total	<1 mg/kg	TM153			<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	1.25 ♦ M
Cyanide, Free	<1 mg/kg	TM153			<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Arsenic	<0.6 mg/kg	TM181			17.7 M	10.9 M	6.05 M	13.6 M	81.7 M
Cadmium	<0.02 mg/kg	TM181			0.271 M	<0.2 M	<0.2 M	0.0786 M	<0.2 M
Chromium	<0.9 mg/kg	TM181			34.4 M	129 M	525 M	37 M	86.7 M
Copper	<1.4 mg/kg	TM181			18.5 M	19.7 M	18.3 M	12.9 M	41.1 M
Iron	<1000 mg/kg	TM181			36400 #	189000 #	147000 #	34100 #	61700 #
Lead	<0.7 mg/kg	TM181			41.4 M	29.9 M	9.99 M	31.5 M	46.2 M
Manganese	<0.13 mg/kg	TM181			477 M	7510 M	32800 M	414 M	34700 M
Mercury	<0.14 mg/kg	TM181			<0.14 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181			34.4 M	56.6 M	13.4 M	35.2 M	88.3 M
Selenium	<1 mg/kg	TM181			1.88 #	<10 #	21 #	1.52 #	24.8 #
Vanadium	<0.2 mg/kg	TM181			54.5 #	123 #	416 #	58.8 #	183 #
Zinc	<1.9 mg/kg	TM181			156 M	236 M	38.6 M	105 M	188 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.102	3.43		0.309
Calcium	<21 mg/kg	TM224				101000	226000		203000
Magnesium	<8 mg/kg	TM224				17400	7200		23800
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.063 M	1.46 M		0.0706 M

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-F10	4E-F10-V				
			Depth (m)	1.00 - 1.00	2.50 - 2.50				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	26/11/2018	26/11/2018				
			Sample Time	00:00	00:00				
			Date Received	28/11/2018	28/11/2018				
			SDG Ref	181128-38	181128-38				
			Lab Sample No.(s)	18833074	18833078				
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9	25				
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	169 M				
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M				
Sulphur, Total	<0.02 %	TM132		0.466					
Sulphate, Total potential	<0.06 %	TM132		1.4					
Soil Organic Matter (SOM)	<0.35 %	TM132		2.57 #	1.27 #				
pH	1 pH Units	TM133		11.3 M	7.76 M				
Cyanide, Total	<1 mg/kg	TM153		1.67 ♦ M	<1 ♦ M				
Cyanide, Free	<1 mg/kg	TM153		<1 ♦ M	<1 ♦ M				
Arsenic	<0.6 mg/kg	TM181		4.05 M	21.8 M				
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.0827 M				
Chromium	<0.9 mg/kg	TM181		52.4 M	34.9 M				
Copper	<1.4 mg/kg	TM181		25.8 M	11.5 M				
Iron	<1000 mg/kg	TM181		45900 #	42900 #				
Lead	<0.7 mg/kg	TM181		13.6 M	33.4 M				
Manganese	<0.13 mg/kg	TM181		6820 M	311 M				
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M				
Nickel	<0.2 mg/kg	TM181		8.26 M	41 M				
Selenium	<1 mg/kg	TM181		4.12 #	<1 #				
Vanadium	<0.2 mg/kg	TM181		149 #	58.2 #				
Zinc	<1.9 mg/kg	TM181		94.2 M	113 M				
Sulphate, acid soluble (total)	<0.02 %	TM221		0.507					
Calcium	<21 mg/kg	TM224		192000					
Magnesium	<8 mg/kg	TM224		21200					
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.213 M					

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833052	18833057	18833063	18833070	18833100	18833106
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91	89.4	93.2	92	91.7	89.3
Acenaphthene-d10 % recovery**	%	TM218		86.4	80.5	94.8	89.3	92.8	83.9
Phenanthrene-d10 % recovery**	%	TM218		89.7	77.5	90.7	84.8	88.9	82.8
Chrysene-d12 % recovery**	%	TM218		80.4	72.2	80.8	77.3	81.7	79
Perylene-d12 % recovery**	%	TM218		75.8	72.4	78.3	84.8	82.4	82.2
Naphthalene	<0.009 mg/kg	TM218		0.229 ♦ M	<0.09 ♦ M	0.205 ♦ M	0.0136 ♦ M	0.353 ♦ M	<0.09 ♦ M
Acenaphthylene	<0.012 mg/kg	TM218		0.0663 ♦ M	<0.12 ♦ M	0.0503 ♦ M	<0.012 ♦ M	0.0612 ♦ M	<0.12 ♦ M
Acenaphthene	<0.008 mg/kg	TM218		0.0149 ♦ M	<0.08 ♦ M	0.0497 ♦ M	<0.008 ♦ M	0.0311 ♦ M	<0.08 ♦ M
Fluorene	<0.01 mg/kg	TM218		0.0448 ♦ M	<0.1 ♦ M	0.0541 ♦ M	<0.01 ♦ M	0.0295 ♦ M	<0.1 ♦ M
Phenanthrene	<0.015 mg/kg	TM218		0.425 ♦ M	0.213 ♦ M	0.429 ♦ M	0.0279 ♦ M	0.393 ♦ M	0.223 ♦ M
Anthracene	<0.016 mg/kg	TM218		0.0995 ♦ M	<0.16 ♦ M	0.11 ♦ M	<0.016 ♦ M	0.114 ♦ M	<0.16 ♦ M
Fluoranthene	<0.017 mg/kg	TM218		0.531 ♦ M	0.393 ♦ M	0.605 ♦ M	0.055 ♦ M	0.822 ♦ M	0.804 ♦ M
Pyrene	<0.015 mg/kg	TM218		0.444 ♦ M	0.31 ♦ M	0.564 ♦ M	0.0439 ♦ M	0.732 ♦ M	1.95 ♦ M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.262 ♦ M	0.198 ♦ M	0.236 ♦ M	0.0294 ♦ M	0.488 ♦ M	0.622 ♦ M
Chrysene	<0.01 mg/kg	TM218		0.228 ♦ M	0.153 ♦ M	0.246 ♦ M	0.0253 ♦ M	0.481 ♦ M	0.56 ♦ M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.288 ♦ M	0.299 ♦ M	0.253 ♦ M	0.0356 ♦ M	0.708 ♦ M	0.806 ♦ M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.114 ♦ M	<0.14 ♦ M	0.105 ♦ M	<0.014 ♦ M	0.235 ♦ M	0.177 ♦ M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.223 ♦ M	0.272 ♦ M	0.214 ♦ M	0.0288 ♦ M	0.51 ♦ M	0.565 ♦ M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.195 ♦ M	0.315 ♦ M	0.185 ♦ M	<0.018 ♦ M	0.46 ♦ M	0.462 ♦ M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0398 ♦ M	<0.23 ♦ M	0.0393 ♦ M	<0.023 ♦ M	0.0868 ♦ M	<0.23 ♦ M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.187 ♦ M	0.386 ♦ M	0.2 ♦ M	<0.024 ♦ M	0.416 ♦ M	0.476 ♦ M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.39	2.54	3.55	0.259	5.92	6.64

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D10-V	4E-E10	4E-E10	4E-E10-V	4E-F10	4E-F10
			Depth (m)	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50	2.50 - 2.50	0.40 - 0.40	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833046	18833085	18833091	18833096	18833042	18833074
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.2	92.9	90.6	92.8	93.3	87.9
Acenaphthene-d10 % recovery**	%	TM218		90.3	88.6	90.5	90.2	92.7	88.6
Phenanthrene-d10 % recovery**	%	TM218		87.1	83.4	86.8	87.5	89.7	91.3
Chrysene-d12 % recovery**	%	TM218		79.7	72.3	77.7	91.6	96.8	103
Perylene-d12 % recovery**	%	TM218		86.9	72.4	83.6	86.1	96.6	109
Naphthalene	<0.009 mg/kg	TM218		0.458 ♦ M	0.089 ♦ M	0.411 ♦ M	2.45 ♦ M	0.227 ♦ M	0.121 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 ♦ M	0.0286 ♦ M	0.0167 ♦ M	<0.012 ♦ M	0.364 ♦ M	0.448 M
Acenaphthene	<0.008 mg/kg	TM218		0.0139 ♦ M	<0.008 ♦ M	0.0431 ♦ M	<0.008 ♦ M	0.0638 ♦ M	0.0328 M
Fluorene	<0.01 mg/kg	TM218		<0.01 ♦ M	0.0392 ♦ M	0.0316 ♦ M	0.023 ♦ M	0.0554 ♦ M	0.0627 M
Phenanthrene	<0.015 mg/kg	TM218		0.0335 ♦ M	0.18 ♦ M	0.696 ♦ M	<0.015 ♦ M	0.762 ♦ M	1.17 M
Anthracene	<0.016 mg/kg	TM218		<0.016 ♦ M	0.295 ♦ M	0.0704 ♦ M	<0.016 ♦ M	0.23 ♦ M	0.399 M
Fluoranthene	<0.017 mg/kg	TM218		0.0429 ♦ M	0.215 ♦ M	1.53 ♦ M	<0.017 ♦ M	2.88 ♦ M	5.58 M
Pyrene	<0.015 mg/kg	TM218		0.0326 ♦ M	0.17 ♦ M	1.49 ♦ M	<0.015 ♦ M	2.43 ♦ M	4.98 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 ♦ M	0.129 ♦ M	1.17 ♦ M	<0.014 ♦ M	2.02 ♦ M	3.48 M
Chrysene	<0.01 mg/kg	TM218		0.0226 ♦ M	0.14 ♦ M	1.21 ♦ M	<0.01 ♦ M	1.93 ♦ M	2.56 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0282 ♦ M	0.151 ♦ M	1.75 ♦ M	<0.015 ♦ M	3.46 ♦ M	3.92 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 ♦ M	0.0517 ♦ M	0.637 ♦ M	<0.014 ♦ M	1.19 ♦ M	1.47 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 ♦ M	0.129 ♦ M	1.63 ♦ M	<0.015 ♦ M	2 ♦ M	3.19 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 ♦ M	0.133 ♦ M	1.42 ♦ M	<0.018 ♦ M	1.59 ♦ M	1.4 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 ♦ M	0.028 ♦ M	0.288 ♦ M	<0.023 ♦ M	0.291 ♦ M	0.441 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 ♦ M	0.136 ♦ M	1.44 ♦ M	<0.024 ♦ M	1.47 ♦ M	1.72 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.632	1.92	13.8	2.47	21	31

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			4E-F10-V	2.50 - 2.50	Soil/Solid (S)	26/11/2018	00:00	28/11/2018	181128-38	18833078	
Naphthalene-d8 % recovery**	%	TM218	93.2								
Acenaphthene-d10 % recovery**	%	TM218	90.3								
Phenanthrene-d10 % recovery**	%	TM218	83.8								
Chrysene-d12 % recovery**	%	TM218	75								
Perylene-d12 % recovery**	%	TM218	79								
Naphthalene	<0.009 mg/kg	TM218	0.0244 ♦ M								
Acenaphthylene	<0.012 mg/kg	TM218	<0.012 ♦ M								
Acenaphthene	<0.008 mg/kg	TM218	<0.008 ♦ M								
Fluorene	<0.01 mg/kg	TM218	<0.01 ♦ M								
Phenanthrene	<0.015 mg/kg	TM218	0.0209 ♦ M								
Anthracene	<0.016 mg/kg	TM218	<0.016 ♦ M								
Fluoranthene	<0.017 mg/kg	TM218	0.0569 ♦ M								
Pyrene	<0.015 mg/kg	TM218	0.0602 ♦ M								
Benz(a)anthracene	<0.014 mg/kg	TM218	0.042 ♦ M								
Chrysene	<0.01 mg/kg	TM218	0.0457 ♦ M								
Benzo(b)fluoranthene	<0.015 mg/kg	TM218	0.0516 ♦ M								
Benzo(k)fluoranthene	<0.014 mg/kg	TM218	0.025 ♦ M								
Benzo(a)pyrene	<0.015 mg/kg	TM218	0.0523 ♦ M								
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218	0.0462 ♦ M								
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218	<0.023 ♦ M								
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218	0.048 ♦ M								
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218	0.473								

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Semi Volatile Organic Compounds

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833052	18833057	18833063	18833070	18833100	18833106
			AGS Reference						
Phenol	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
Pentachlorophenol	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
n-Nitroso-n-dipropylamine	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
Nitrobenzene	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
Isophorone	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
Hexachloroethane	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
Hexachlorocyclopentadiene	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
Hexachlorobutadiene	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
Hexachlorobenzene	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
n-Dioctyl phthalate	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
Dimethyl phthalate	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
Diethyl phthalate	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
n-Dibutyl phthalate	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
Dibenzofuran	<0.1 mg/kg	TM157		<0.1	<1	0.175	<0.1	0.122	<1
Carbazole	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
Butylbenzyl phthalate	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
bis(2-Ethylhexyl) phthalate	<0.1 mg/kg	TM157		<0.1	<1	0.142	<0.1	0.439	<1
bis(2-Chloroethoxy)methane	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
bis(2-Chloroethyl)ether	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
Azobenzene	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
4-Nitrophenol	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
4-Nitroaniline	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
4-Methylphenol	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
4-Chlorophenylphenylether	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
4-Chloroaniline	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
4-Chloro-3-methylphenol	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
4-Bromophenylphenylether	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
3-Nitroaniline	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
2-Nitrophenol	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
2-Nitroaniline	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
2-Methylphenol	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
1,2,4-Trichlorobenzene	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
2-Chlorophenol	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Semi Volatile Organic Compounds

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833052	18833057	18833063	18833070	18833100	18833106
			AGS Reference						
2,6-Dinitrotoluene	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
2,4-Dinitrotoluene	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
2,4-Dimethylphenol	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
2,4-Dichlorophenol	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
2,4,6-Trichlorophenol	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
2,4,5-Trichlorophenol	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
1,4-Dichlorobenzene	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
1,3-Dichlorobenzene	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
1,2-Dichlorobenzene	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
2-Chloronaphthalene	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
2-Methylnaphthalene	<0.1 mg/kg	TM157		0.312	<1	0.349	<0.1	0.235	<1
Acenaphthylene	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
Acenaphthene	<0.1 mg/kg	TM157		<0.1	<1	0.218	<0.1	<0.1	<1
Anthracene	<0.1 mg/kg	TM157		<0.1	<1	0.207	<0.1	0.153	<1
Benzo(a)anthracene	<0.1 mg/kg	TM157		0.301	<1	0.426	<0.1	0.918	<1
Benzo(b)fluoranthene	<0.1 mg/kg	TM157		0.323	<1	0.448	<0.1	1.1	<1
Benzo(k)fluoranthene	<0.1 mg/kg	TM157		0.237	<1	0.339	<0.1	0.847	<1
Benzo(a)pyrene	<0.1 mg/kg	TM157		0.28	<1	0.328	<0.1	0.908	<1
Benzo(g,h,i)perylene	<0.1 mg/kg	TM157		0.269	<1	0.349	<0.1	0.867	<1
Chrysene	<0.1 mg/kg	TM157		0.323	<1	0.491	<0.1	0.979	<1
Fluoranthene	<0.1 mg/kg	TM157		0.463	1.13	0.972	<0.1	1.32	<1
Fluorene	<0.1 mg/kg	TM157		<0.1	<1	0.197	<0.1	<0.1	<1
Indeno(1,2,3-cd)pyrene	<0.1 mg/kg	TM157		0.237	<1	0.306	<0.1	0.806	<1
Phenanthrene	<0.1 mg/kg	TM157		0.42	<1	0.852	<0.1	0.612	<1
Pyrene	<0.1 mg/kg	TM157		0.409	<1	0.917	<0.1	1.21	<1
Naphthalene	<0.1 mg/kg	TM157		0.377	<1	0.382	<0.1	0.745	<1
Dibenzo(a,h)anthracene	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	0.112	<1
Bis(2-chloroisopropyl) ether	<0.1 mg/kg	TM157		<0.1	<1	<0.1	<0.1	<0.1	<1
TIC report		TM157		Not Detected	Not Detected	Detected	Not Detected	Not Detected	Not Detected
Total SVOC TIC	<0.1 mg/kg	TM157		<1	<10	22.7	<1	<1	<10
dimethylheptadecane	mg/kg	TM157				2.95			
Heptadecane	mg/kg	TM157				2.87			

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Semi Volatile Organic Compounds

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833052	18833057	18833063	18833070	18833100	18833106
			AGS Reference						
Hexadecane	mg/kg	TM157				2.33			
Hexatriacontane	mg/kg	TM157				1.76			
methyloctadecane	mg/kg	TM157				2.52			
Nonadecane	mg/kg	TM157				3.06			
Octadecane	mg/kg	TM157				2.18			
Pentadecane	mg/kg	TM157				1.72			
Tetradecane	mg/kg	TM157				1.43			
Tetratetracontane	mg/kg	TM157				1.9			

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Semi Volatile Organic Compounds

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D10-V	4E-E10	4E-E10	4E-E10-V	4E-F10	4E-F10
			Depth (m)	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50	2.50 - 2.50	0.40 - 0.40	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833046	18833085	18833091	18833096	18833042	18833074
			AGS Reference						
Phenol	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pentachlorophenol	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
n-Nitroso-n-dipropylamine	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrobenzene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isophorone	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachloroethane	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachlorocyclopentadiene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachlorobutadiene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachlorobenzene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
n-Dioctyl phthalate	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethyl phthalate	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Diethyl phthalate	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
n-Dibutyl phthalate	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzofuran	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbazole	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Butylbenzyl phthalate	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
bis(2-Ethylhexyl) phthalate	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	0.308
bis(2-Chloroethoxy)methane	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
bis(2-Chloroethyl)ether	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Azobenzene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Nitrophenol	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Nitroaniline	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Methylphenol	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Chlorophenylphenylether	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Chloroaniline	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Chloro-3-methylphenol	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-Bromophenylphenylether	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
3-Nitroaniline	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-Nitrophenol	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-Nitroaniline	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-Methylphenol	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4-Trichlorobenzene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-Chlorophenol	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Semi Volatile Organic Compounds

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D10-V	4E-E10	4E-E10	4E-E10-V	4E-F10	4E-F10
			Depth (m)	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50	2.50 - 2.50	0.40 - 0.40	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833046	18833085	18833091	18833096	18833042	18833074
			AGS Reference						
2,6-Dinitrotoluene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,4-Dinitrotoluene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,4-Dimethylphenol	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,4-Dichlorophenol	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,4,6-Trichlorophenol	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,4,5-Trichlorophenol	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-Dichlorobenzene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-Dichlorobenzene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-Chloronaphthalene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-Methylnaphthalene	<0.1 mg/kg	TM157		0.492	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	0.161	0.297
Acenaphthene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	0.107	0.253
Benzo(a)anthracene	<0.1 mg/kg	TM157		<0.1	0.207	0.605	<0.1	1.01	2.19
Benzo(b)fluoranthene	<0.1 mg/kg	TM157		<0.1	0.218	0.748	<0.1	1.27	2.1
Benzo(k)fluoranthene	<0.1 mg/kg	TM157		<0.1	0.152	0.682	<0.1	1.05	1.8
Benzo(a)pyrene	<0.1 mg/kg	TM157		<0.1	0.163	0.748	<0.1	1.22	1.92
Benzo(g,h,i)perylene	<0.1 mg/kg	TM157		<0.1	0.185	0.671	<0.1	0.923	1.38
Chrysene	<0.1 mg/kg	TM157		<0.1	0.24	0.671	<0.1	1.03	2.09
Fluoranthene	<0.1 mg/kg	TM157		<0.1	0.327	0.561	<0.1	1.19	3.28
Fluorene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	<0.1 mg/kg	TM157		<0.1	0.163	0.704	<0.1	0.976	1.46
Phenanthrene	<0.1 mg/kg	TM157		<0.1	0.229	0.22	<0.1	0.333	0.978
Pyrene	<0.1 mg/kg	TM157		<0.1	0.25	0.605	<0.1	1.08	3.04
Naphthalene	<0.1 mg/kg	TM157		1.01	0.131	<0.1	1.91	0.15	0.242
Dibenzo(a,h)anthracene	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	0.118	0.176
Bis(2-chloroisopropyl) ether	<0.1 mg/kg	TM157		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TIC report		TM157		Detected	Not Detected	Detected	Not Detected	Not Detected	Detected
Total SVOC TIC	<0.1 mg/kg	TM157		1.87	<1	29	<1	<1	7.82
Mix of Hydrocarbons	mg/kg	TM157		1.87		6.38			7.82
tetrahydromethanoindene	mg/kg	TM157				22.6			

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Semi Volatile Organic Compounds

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-F10-V
			Depth (m)	2.50 - 2.50
			Sample Type	Soil/Solid (S)
			Date Sampled	26/11/2018
			Sample Time	00:00
			Date Received	28/11/2018
			SDG Ref	181128-38
			Lab Sample No.(s)	18833078
			AGS Reference	
Phenol	<0.1 mg/kg	TM157		<0.1
Pentachlorophenol	<0.1 mg/kg	TM157		<0.1
n-Nitroso-n-dipropylamine	<0.1 mg/kg	TM157		<0.1
Nitrobenzene	<0.1 mg/kg	TM157		<0.1
Isophorone	<0.1 mg/kg	TM157		<0.1
Hexachloroethane	<0.1 mg/kg	TM157		<0.1
Hexachlorocyclopentadiene	<0.1 mg/kg	TM157		<0.1
Hexachlorobutadiene	<0.1 mg/kg	TM157		<0.1
Hexachlorobenzene	<0.1 mg/kg	TM157		<0.1
n-Dioctyl phthalate	<0.1 mg/kg	TM157		<0.1
Dimethyl phthalate	<0.1 mg/kg	TM157		<0.1
Diethyl phthalate	<0.1 mg/kg	TM157		<0.1
n-Dibutyl phthalate	<0.1 mg/kg	TM157		<0.1
Dibenzofuran	<0.1 mg/kg	TM157		<0.1
Carbazole	<0.1 mg/kg	TM157		<0.1
Butylbenzyl phthalate	<0.1 mg/kg	TM157		<0.1
bis(2-Ethylhexyl) phthalate	<0.1 mg/kg	TM157		<0.1
bis(2-Chloroethoxy)methane	<0.1 mg/kg	TM157		<0.1
bis(2-Chloroethyl)ether	<0.1 mg/kg	TM157		<0.1
Azobenzene	<0.1 mg/kg	TM157		<0.1
4-Nitrophenol	<0.1 mg/kg	TM157		<0.1
4-Nitroaniline	<0.1 mg/kg	TM157		<0.1
4-Methylphenol	<0.1 mg/kg	TM157		<0.1
4-Chlorophenylphenylether	<0.1 mg/kg	TM157		<0.1
4-Chloroaniline	<0.1 mg/kg	TM157		<0.1
4-Chloro-3-methylphenol	<0.1 mg/kg	TM157		<0.1
4-Bromophenylphenylether	<0.1 mg/kg	TM157		<0.1
3-Nitroaniline	<0.1 mg/kg	TM157		<0.1
2-Nitrophenol	<0.1 mg/kg	TM157		<0.1
2-Nitroaniline	<0.1 mg/kg	TM157		<0.1
2-Methylphenol	<0.1 mg/kg	TM157		<0.1
1,2,4-Trichlorobenzene	<0.1 mg/kg	TM157		<0.1
2-Chlorophenol	<0.1 mg/kg	TM157		<0.1

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Semi Volatile Organic Compounds

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4E-F10-V
Depth (m)	2.50 - 2.50
Sample Type	Soil/Solid (S)
Date Sampled	26/11/2018
Sample Time	00:00
Date Received	28/11/2018
SDG Ref	181128-38
Lab Sample No.(s)	18833078
AGS Reference	

Component	LOD/Units	Method	
2,6-Dinitrotoluene	<0.1 mg/kg	TM157	<0.1
2,4-Dinitrotoluene	<0.1 mg/kg	TM157	<0.1
2,4-Dimethylphenol	<0.1 mg/kg	TM157	<0.1
2,4-Dichlorophenol	<0.1 mg/kg	TM157	<0.1
2,4,6-Trichlorophenol	<0.1 mg/kg	TM157	<0.1
2,4,5-Trichlorophenol	<0.1 mg/kg	TM157	<0.1
1,4-Dichlorobenzene	<0.1 mg/kg	TM157	<0.1
1,3-Dichlorobenzene	<0.1 mg/kg	TM157	<0.1
1,2-Dichlorobenzene	<0.1 mg/kg	TM157	<0.1
2-Chloronaphthalene	<0.1 mg/kg	TM157	<0.1
2-Methylnaphthalene	<0.1 mg/kg	TM157	<0.1
Acenaphthylene	<0.1 mg/kg	TM157	<0.1
Acenaphthene	<0.1 mg/kg	TM157	<0.1
Anthracene	<0.1 mg/kg	TM157	<0.1
Benzo(a)anthracene	<0.1 mg/kg	TM157	<0.1
Benzo(b)fluoranthene	<0.1 mg/kg	TM157	<0.1
Benzo(k)fluoranthene	<0.1 mg/kg	TM157	<0.1
Benzo(a)pyrene	<0.1 mg/kg	TM157	<0.1
Benzo(g,h,i)perylene	<0.1 mg/kg	TM157	<0.1
Chrysene	<0.1 mg/kg	TM157	<0.1
Fluoranthene	<0.1 mg/kg	TM157	<0.1
Fluorene	<0.1 mg/kg	TM157	<0.1
Indeno(1,2,3-cd)pyrene	<0.1 mg/kg	TM157	<0.1
Phenanthrene	<0.1 mg/kg	TM157	<0.1
Pyrene	<0.1 mg/kg	TM157	<0.1
Naphthalene	<0.1 mg/kg	TM157	<0.1
Dibenzo(a,h)anthracene	<0.1 mg/kg	TM157	<0.1
Bis(2-chloroisopropyl) ether	<0.1 mg/kg	TM157	<0.1
TIC report		TM157	Not Detected
Total SVOC TIC	<0.1 mg/kg	TM157	<1

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

SVOC MS (W) - Aqueous

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4E-D10
Depth (m)	1.70 - 1.70
Sample Type	Ground Water (GW)
Date Sampled	26/11/2018
Sample Time	00:00
Date Received	28/11/2018
SDG Ref	181128-38
Lab Sample No.(s)	18833111
AGS Reference	

Component	LOD/Units	Method	
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<100 #
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<100 #
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<100 #
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<100 #
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<100 #
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<100 #
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<100 #
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<100 #
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<100 #
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<100 #
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<100 #
2-Chlorophenol (aq)	<1 µg/l	TM176	<100 #
2-Methylnaphthalene (aq)	<1 µg/l	TM176	2260 #
2-Methylphenol (aq)	<1 µg/l	TM176	<100 #
2-Nitroaniline (aq)	<1 µg/l	TM176	<100 #
2-Nitrophenol (aq)	<1 µg/l	TM176	<100 #
3-Nitroaniline (aq)	<1 µg/l	TM176	<100 #
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<100 #
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<100 #
4-Chloroaniline (aq)	<1 µg/l	TM176	<100
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<100 #
4-Methylphenol (aq)	<1 µg/l	TM176	<100 #
4-Nitroaniline (aq)	<1 µg/l	TM176	<100 #
4-Nitrophenol (aq)	<1 µg/l	TM176	<100
Azobenzene (aq)	<1 µg/l	TM176	<100 #
Acenaphthylene (aq)	<1 µg/l	TM176	<100 #
Acenaphthene (aq)	<1 µg/l	TM176	245 #
Anthracene (aq)	<1 µg/l	TM176	<100 #
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<100 #
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<100 #
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<200 #
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<100 #
Benzo(a)anthracene (aq)	<1 µg/l	TM176	170 #

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

SVOC MS (W) - Aqueous

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4E-D10
Depth (m)	1.70 - 1.70
Sample Type	Ground Water (GW)
Date Sampled	26/11/2018
Sample Time	00:00
Date Received	28/11/2018
SDG Ref	181128-38
Lab Sample No.(s)	18833111
AGS Reference	

Component	LOD/Units	Method	
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	158 #
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	147 #
Benzo(a)pyrene (aq)	<1 µg/l	TM176	137 #
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<100 #
Carbazole (aq)	<1 µg/l	TM176	<100 #
Chrysene (aq)	<1 µg/l	TM176	199 #
Dibenzofuran (aq)	<1 µg/l	TM176	227 #
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<100 #
Diethyl phthalate (aq)	<1 µg/l	TM176	<100 #
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<100 #
Dimethyl phthalate (aq)	<1 µg/l	TM176	<100 #
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<500 #
Fluoranthene (aq)	<1 µg/l	TM176	<100 #
Fluorene (aq)	<1 µg/l	TM176	257 #
Hexachlorobenzene (aq)	<1 µg/l	TM176	<100 #
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<100 #
Pentachlorophenol (aq)	<1 µg/l	TM176	<100
Phenol (aq)	<1 µg/l	TM176	<100
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<100 #
Hexachloroethane (aq)	<1 µg/l	TM176	<100 #
Nitrobenzene (aq)	<1 µg/l	TM176	<100 #
Naphthalene (aq)	<1 µg/l	TM176	5300 #
Isophorone (aq)	<1 µg/l	TM176	<100 #
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<100
Phenanthrene (aq)	<1 µg/l	TM176	<100 #
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<100 #
Pyrene (aq)	<1 µg/l	TM176	<100 #
SVOC TIC (aq)		TM176	Not Detected &
Total SVOC TIC	<10 µg/l	TM176	<100

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833052	18833057	18833063	18833070	18833100	18833106
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		75 ♦	95.1 ♦	92.9 ♦	102 ♦	92 ♦	93.7 ♦
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.245 ♦ M	<0.2 ♦ M	<0.2 ♦ M	<0.2 ♦ M	0.43 ♦ M	0.962 ♦ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0463 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	0.051 ♦	0.0582 ♦
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0516 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	0.0632 ♦	0.0538 ♦
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0613 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	0.142 ♦	0.483 ♦
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.69	15	59.4	<0.1	13.9	13.7
Aliphatics >C16-C21	<0.1 mg/kg	TM173		31.7	24.5	175	0.947	36.9	52.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		200	355	582	13.8	74.8	151
Aliphatics >C35-C44	<0.1 mg/kg	TM173		56.7	212	138	1.03	25.8	96.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		294	606	954	15.7	151	314
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0344 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	0.0418 ♦	0.0358 ♦
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0409 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	0.0949 ♦	0.323 ♦
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.37	3.57	24.9	<0.1	5.27	3.22
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		13.8	31	95.8	1.9	17.9	21.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		76.3	451	302	26.9	59.2	148
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		39.4	481	134	6.41	43.3	185
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		15.6	230	56.2	1.86	20.2	89.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		133	967	557	35.2	126	357
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		427	1570	1510	51	277	672

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D10-V	4E-E10	4E-E10	4E-E10-V	4E-F10	4E-F10
			Depth (m)	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50	2.50 - 2.50	0.40 - 0.40	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833046	18833085	18833091	18833096	18833042	18833074
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		105 ♦	88.2 ♦	102 ♦	103 ♦	88.6 ♦	99.2 ♦
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.453 ♦ M	0.245 ♦ M	1090 ♦ M	34.5 ♦ M	0.891 ♦ M	0.529 ♦ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	0.923 ♦	0.74 ♦	<0.02 ♦	<0.02 ♦
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0581 ♦	0.0294 ♦	0.363 ♦	0.66 ♦	0.0601 ♦	0.0396 ♦
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0969 ♦	0.0272 ♦	2.59 ♦	1.77 ♦	0.0848 ♦	0.0451 ♦
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.128 ♦	0.0958 ♦	651 ♦	17.4 ♦	0.392 ♦	0.235 ♦
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.24	<0.1	2.85	<0.1	<0.1	1.47
Aliphatics >C16-C21	<0.1 mg/kg	TM173		1.53	1.5	7.05	<0.1	5.01	10.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		6.38	30.6	36.9	<0.1	32.8	140
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	6.9	9.07	<0.1	10.8	31.2
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		9.15	39	55.8	<0.1	48.6	182
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	0.427 ♦	1.09 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.2 ♦	<0.2 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0641 ♦	<0.02 ♦	1.73 ♦	1.18 ♦	0.0558 ♦	0.0297 ♦
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0849 ♦	0.0643 ♦	434 ♦	11.6 ♦	0.261 ♦	0.157 ♦
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	0.461	17.3	<0.1	1.54	1.05
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1.37	3.93	20.5	<0.1	17.7	16.8
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		28.4	21.7	91.3	2.19	101	67.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		3.73	13.1	32.3	<0.1	46.1	27.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		0.644	6.01	12.9	<0.1	19	9.49
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		33.5	39.3	161	2.19	167	113
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		43.1	78.5	1310	36.6	216	296

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-F10-V
			Depth (m)	2.50 - 2.50
			Sample Type	Soil/Solid (S)
			Date Sampled	26/11/2018
			Sample Time	00:00
			Date Received	28/11/2018
			SDG Ref	181128-38
			Lab Sample No.(s)	18833078
			AGS Reference	
GRO Surrogate % recovery**	%	TM089		106 ♦
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.611 ♦ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 ♦
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0683 ♦
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0898 ♦
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.225 ♦
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 ♦
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 ♦
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.059 ♦
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.15 ♦
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		<0.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		<0.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		0.592

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

TPH CWG (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref. 4E-D10
			Depth (m) 1.70 - 1.70
			Sample Type Ground Water (GW)
			Date Sampled 26/11/2018
			Sample Time 00:00
			Date Received 28/11/2018
			SDG Ref 181128-38
			Lab Sample No.(s) 18833111
			AGS Reference
GRO Surrogate % recovery**	%	TM245	93 ♦
GRO >C5-C12	<50 µg/l	TM245	19600 ♦ #
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3 ♦
Benzene	<7 µg/l	TM245	2710 ♦
Toluene	<4 µg/l	TM245	934 ♦
Ethylbenzene	<5 µg/l	TM245	114 ♦
m,p-Xylene	<8 µg/l	TM245	1160 ♦
o-Xylene	<3 µg/l	TM245	290 ♦
Sum of detected Xylenes	<11 µg/l	TM245	1450 ♦
Sum of detected BTEX	<28 µg/l	TM245	5210 ♦
Aliphatics >C5-C6	<10 µg/l	TM245	133 ♦
Aliphatics >C6-C8	<10 µg/l	TM245	71 ♦
Aliphatics >C8-C10	<10 µg/l	TM245	1130 ♦
Aliphatics >C10-C12	<10 µg/l	TM245	7360 ♦
Aliphatics >C12-C16 (diss.filt)	<10 µg/l	TM174	95
Aliphatics >C16-C21 (diss.filt)	<10 µg/l	TM174	19
Aliphatics >C21-C35 (diss.filt)	<10 µg/l	TM174	<10
Total Aliphatics >C12-C35 (diss.filt)	<10 µg/l	TM174	118
Aromatics >EC5-EC7	<10 µg/l	TM245	2710 ♦
Aromatics >EC7-EC8	<10 µg/l	TM245	934 ♦
Aromatics >EC8-EC10	<10 µg/l	TM245	2320 ♦
Aromatics >EC10-EC12	<10 µg/l	TM245	4900 ♦
Aromatics >EC12-EC16 (diss.filt)	<10 µg/l	TM174	2100
Aromatics >EC16-EC21 (diss.filt)	<10 µg/l	TM174	241
Aromatics >EC21-EC35 (diss.filt)	<10 µg/l	TM174	66
Aromatics >EC16-EC35 (diss.filt)	<10 µg/l	TM174	307
Total Aromatics >EC12-EC35 (diss.filt)	<10 µg/l	TM174	2400
Total Aliphatics & Aromatics >C5-35 (diss.filt)	<10 µg/l	TM174	22100

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833052	18833057	18833063	18833070	18833100	18833106
			AGS Reference						
Dibromofluoromethane**	%	TM116		108 ♦	116 ♦	114 ♦	108 ♦	111 ♦	113 ♦
Toluene-d8**	%	TM116		95.6 ♦	90.7 ♦	92.4 ♦	98.8 ♦	95.2 ♦	92.5 ♦
4-Bromofluorobenzene**	%	TM116		85 ♦	82.1 ♦	88.5 ♦	95.3 ♦	90.8 ♦	87.2 ♦
Dichlorodifluoromethane	<0.006 mg/kg	TM116		<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M
Chloromethane	<0.007 mg/kg	TM116		<0.07 & #	<0.07 & #	<0.07 & #	<0.07 & #	<0.07 & #	<0.07 & #
Vinyl Chloride	<0.006 mg/kg	TM116		<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M
Bromomethane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Chloroethane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Trichlorofluorormethane	<0.006 mg/kg	TM116		<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M
1,1-Dichloroethene	<0.01 mg/kg	TM116		<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #
Carbon Disulphide	<0.007 mg/kg	TM116		<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M
Dichloromethane	<0.01 mg/kg	TM116		3.33 & #	0.548 & #	2.36 & #	0.192 & #	0.446 & #	<0.1 & #
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M
trans-1,2-Dichloroethene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
1,1-Dichloroethane	<0.008 mg/kg	TM116		<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M
cis-1,2-Dichloroethene	<0.006 mg/kg	TM116		<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M
2,2-Dichloropropane	<0.01 mg/kg	TM116		<0.1 &	<0.1 &	<0.1 &	<0.1 &	<0.1 &	<0.1 &
Bromochloromethane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Chloroform	<0.008 mg/kg	TM116		<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M
1,1,1-Trichloroethane	<0.007 mg/kg	TM116		<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M
1,1-Dichloropropene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Carbontetrachloride	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
1,2-Dichloroethane	<0.005 mg/kg	TM116		<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M
Benzene	<0.009 mg/kg	TM116		<0.09 ♦ M	<0.09 ♦ M	<0.09 ♦ M	<0.09 ♦ M	<0.09 ♦ M	<0.09 ♦ M
Trichloroethene	<0.009 mg/kg	TM116		<0.09 & #	<0.09 & #	<0.09 & #	<0.09 & #	<0.09 & #	<0.09 & #
1,2-Dichloropropane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Dibromomethane	<0.009 mg/kg	TM116		<0.09 & M	<0.09 & M	<0.09 & M	<0.09 & M	<0.09 & M	<0.09 & M
Bromodichloromethane	<0.007 mg/kg	TM116		<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M
cis-1,3-Dichloropropene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Toluene	<0.007 mg/kg	TM116		<0.07 ♦ M	<0.07 ♦ M	<0.07 ♦ M	<0.07 ♦ M	<0.07 ♦ M	<0.07 ♦ M
trans-1,3-Dichloropropene	<0.01 mg/kg	TM116		<0.1 &	<0.1 &	<0.1 &	<0.1 &	<0.1 &	<0.1 &
1,1,2-Trichloroethane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
1,3-Dichloropropane	<0.007 mg/kg	TM116		<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833052	18833057	18833063	18833070	18833100	18833106
			AGS Reference						
Tetrachloroethene	<0.005 mg/kg	TM116		<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M
Dibromochloromethane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
1,2-Dibromoethane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Chlorobenzene	<0.005 mg/kg	TM116		<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M
1,1,1,2-Tetrachloroethane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 ♦ M	<0.04 ♦ M	<0.04 ♦ M	<0.04 ♦ M	<0.04 ♦ M	<0.04 ♦ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 ♦ #	<0.1 ♦ #	<0.1 ♦ #	<0.1 ♦ #	<0.1 ♦ #	<0.1 ♦ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M
Styrene	<0.01 mg/kg	TM116		<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #
Bromoform	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Isopropylbenzene	<0.005 mg/kg	TM116		<0.05 & #	<0.05 & #	<0.05 & #	<0.05 & #	<0.05 & #	<0.05 & #
1,1,2,2-Tetrachloroethane	<0.01 mg/kg	TM116		<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #
1,2,3-Trichloropropane	<0.016 mg/kg	TM116		<0.16 & M	<0.16 & M	<0.16 & M	<0.16 & M	<0.16 & M	<0.16 & M
Bromobenzene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Propylbenzene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
2-Chlorotoluene	<0.009 mg/kg	TM116		<0.09 & M	<0.09 & M	<0.09 & M	<0.09 & M	<0.09 & M	<0.09 & M
1,3,5-Trimethylbenzene	<0.008 mg/kg	TM116		<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M
4-Chlorotoluene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
tert-Butylbenzene	<0.014 mg/kg	TM116		<0.14 & M	<0.14 & M	<0.14 & M	<0.14 & M	<0.14 & M	<0.14 & M
1,2,4-Trimethylbenzene	<0.009 mg/kg	TM116		<0.09 & #	<0.09 & #	<0.09 & #	<0.09 & #	<0.09 & #	<0.09 & #
sec-Butylbenzene	<0.01 mg/kg	TM116		<0.1 &	<0.1 &	<0.1 &	<0.1 &	<0.1 &	<0.1 &
4-Isopropyltoluene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
1,3-Dichlorobenzene	<0.008 mg/kg	TM116		<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M
1,4-Dichlorobenzene	<0.005 mg/kg	TM116		<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M
n-Butylbenzene	<0.011 mg/kg	TM116		<0.11 &	<0.11 &	<0.11 &	<0.11 &	<0.11 &	<0.11 &
1,2-Dichlorobenzene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
1,2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116		<0.14 & M	<0.14 & M	<0.14 & M	<0.14 & M	<0.14 & M	<0.14 & M
Tert-amyl methyl ether	<0.01 mg/kg	TM116		<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #
1,2,4-Trichlorobenzene	<0.02 mg/kg	TM116		<0.2 &	<0.2 &	<0.2 &	<0.2 &	<0.2 &	<0.2 &
Hexachlorobutadiene	<0.02 mg/kg	TM116		<0.2 &	<0.2 &	<0.2 &	<0.2 &	<0.2 &	<0.2 &
Naphthalene	<0.013 mg/kg	TM116		0.275 ♦ M	<0.13 ♦ M	<0.13 ♦ M	<0.13 ♦ M	<0.13 ♦ M	<0.13 ♦ M
1,2,3-Trichlorobenzene	<0.02 mg/kg	TM116		<0.2 & #	<0.2 & #	<0.2 & #	<0.2 & #	<0.2 & #	<0.2 & #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833052	18833057	18833063	18833070	18833100	18833106
			AGS Reference						
VOC TIC		TM116		Not Detected &	Not Detected &	Not Detected &	Not Detected &	Not Detected &	Not Detected &
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 ♦	<0.4 ♦	<0.4 ♦	<0.4 ♦	<0.4 ♦	<0.4 ♦
Total VOC TIC	<0.05 mg/kg	TM116		0	0	0	0	0	0

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D10-V	4E-E10	4E-E10	4E-E10-V	4E-F10	4E-F10
			Depth (m)	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50	2.50 - 2.50	0.40 - 0.40	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833046	18833085	18833091	18833096	18833042	18833074
			AGS Reference						
Dibromofluoromethane**	%	TM116		107 ♦	107 ♦	111 ♦	110 ♦	110 ♦	110 ♦
Toluene-d8**	%	TM116		98.8 ♦	95.7 ♦	96.2 ♦	98.4 ♦	97.2 ♦	97.3 ♦
4-Bromofluorobenzene**	%	TM116		95.4 ♦	87.8 ♦	94.9 ♦	95.8 ♦	95.2 ♦	94.3 ♦
Dichlorodifluoromethane	<0.006 mg/kg	TM116		<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M
Chloromethane	<0.007 mg/kg	TM116		<0.07 & #	<0.07 & #	<0.07 & #	<0.07 & #	<0.07 & #	<0.07 & #
Vinyl Chloride	<0.006 mg/kg	TM116		<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M
Bromomethane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Chloroethane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Trichlorofluoromethane	<0.006 mg/kg	TM116		<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M
1,1-Dichloroethene	<0.01 mg/kg	TM116		<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #
Carbon Disulphide	<0.007 mg/kg	TM116		<0.07 & M	<0.07 & M	1.79 & M	<0.07 & M	<0.07 & M	<0.07 & M
Dichloromethane	<0.01 mg/kg	TM116		<0.1 & #	1.02 & #	0.194 & #	<0.1 & #	0.66 & #	0.18 & #
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M
trans-1,2-Dichloroethene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
1,1-Dichloroethane	<0.008 mg/kg	TM116		<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M
cis-1,2-Dichloroethene	<0.006 mg/kg	TM116		<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M	<0.06 & M
2,2-Dichloropropane	<0.01 mg/kg	TM116		<0.1 &	<0.1 &	<0.1 &	<0.1 &	<0.1 &	<0.1 &
Bromochloromethane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Chloroform	<0.008 mg/kg	TM116		<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M
1,1,1-Trichloroethane	<0.007 mg/kg	TM116		<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M
1,1-Dichloropropene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Carbontetrachloride	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
1,2-Dichloroethane	<0.005 mg/kg	TM116		<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M
Benzene	<0.009 mg/kg	TM116		<0.09 ♦ M	<0.09 ♦ M	0.171 ♦ M	1.76 ♦ M	<0.09 ♦ M	<0.09 ♦ M
Trichloroethene	<0.009 mg/kg	TM116		<0.09 & #	<0.09 & #	<0.09 & #	<0.09 & #	<0.09 & #	<0.09 & #
1,2-Dichloropropane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Dibromomethane	<0.009 mg/kg	TM116		<0.09 & M	<0.09 & M	<0.09 & M	<0.09 & M	<0.09 & M	<0.09 & M
Bromodichloromethane	<0.007 mg/kg	TM116		<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M
cis-1,3-Dichloropropene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Toluene	<0.007 mg/kg	TM116		<0.07 ♦ M	<0.07 ♦ M	<0.07 ♦ M	0.153 ♦ M	<0.07 ♦ M	<0.07 ♦ M
trans-1,3-Dichloropropene	<0.01 mg/kg	TM116		<0.1 &	<0.1 &	<0.1 &	<0.1 &	<0.1 &	<0.1 &
1,1,2-Trichloroethane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
1,3-Dichloropropane	<0.007 mg/kg	TM116		<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M	<0.07 & M

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D10-V	4E-E10	4E-E10	4E-E10-V	4E-F10	4E-F10
			Depth (m)	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50	2.50 - 2.50	0.40 - 0.40	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833046	18833085	18833091	18833096	18833042	18833074
			AGS Reference						
Tetrachloroethene	<0.005 mg/kg	TM116		<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M
Dibromochloromethane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
1,2-Dibromoethane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Chlorobenzene	<0.005 mg/kg	TM116		<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M
1,1,1,2-Tetrachloroethane	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 ♦ M	<0.04 ♦ M	<0.04 ♦ M	0.582 ♦ M	<0.04 ♦ M	<0.04 ♦ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 ♦ #	<0.1 ♦ #	<0.1 ♦ #	0.928 ♦ #	<0.1 ♦ #	<0.1 ♦ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	0.297 ♦ M	<0.1 ♦ M	<0.1 ♦ M
Styrene	<0.01 mg/kg	TM116		<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #
Bromoform	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Isopropylbenzene	<0.005 mg/kg	TM116		<0.05 & #	<0.05 & #	<0.05 & #	<0.05 & #	<0.05 & #	<0.05 & #
1,1,2,2-Tetrachloroethane	<0.01 mg/kg	TM116		<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #
1,2,3-Trichloropropane	<0.016 mg/kg	TM116		<0.16 & M	<0.16 & M	<0.16 & M	<0.16 & M	<0.16 & M	<0.16 & M
Bromobenzene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
Propylbenzene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
2-Chlorotoluene	<0.009 mg/kg	TM116		<0.09 & M	<0.09 & M	<0.09 & M	<0.09 & M	<0.09 & M	<0.09 & M
1,3,5-Trimethylbenzene	<0.008 mg/kg	TM116		<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M
4-Chlorotoluene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
tert-Butylbenzene	<0.014 mg/kg	TM116		<0.14 & M	<0.14 & M	<0.14 & M	<0.14 & M	<0.14 & M	<0.14 & M
1,2,4-Trimethylbenzene	<0.009 mg/kg	TM116		<0.09 & #	<0.09 & #	<0.09 & #	<0.09 & #	<0.09 & #	<0.09 & #
sec-Butylbenzene	<0.01 mg/kg	TM116		<0.1 &	<0.1 &	<0.1 &	<0.1 &	<0.1 &	<0.1 &
4-Isopropyltoluene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
1,3-Dichlorobenzene	<0.008 mg/kg	TM116		<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M	<0.08 & M
1,4-Dichlorobenzene	<0.005 mg/kg	TM116		<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M	<0.05 & M
n-Butylbenzene	<0.011 mg/kg	TM116		<0.11 &	<0.11 &	<0.11 &	<0.11 &	<0.11 &	<0.11 &
1,2-Dichlorobenzene	<0.01 mg/kg	TM116		<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M	<0.1 & M
1,2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116		<0.14 & M	<0.14 & M	<0.14 & M	<0.14 & M	<0.14 & M	<0.14 & M
Tert-amyl methyl ether	<0.01 mg/kg	TM116		<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #	<0.1 & #
1,2,4-Trichlorobenzene	<0.02 mg/kg	TM116		<0.2 &	<0.2 &	<0.2 &	<0.2 &	<0.2 &	<0.2 &
Hexachlorobutadiene	<0.02 mg/kg	TM116		<0.2 &	<0.2 &	<0.2 &	<0.2 &	<0.2 &	<0.2 &
Naphthalene	<0.013 mg/kg	TM116		0.308 ♦ M	<0.13 ♦ M	0.389 ♦ M	10.6 ♦ M	<0.13 ♦ M	<0.13 ♦ M
1,2,3-Trichlorobenzene	<0.02 mg/kg	TM116		<0.2 & #	<0.2 & #	<0.2 & #	<0.2 & #	<0.2 & #	<0.2 & #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D10-V	4E-E10	4E-E10	4E-E10-V	4E-F10	4E-F10
			Depth (m)	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50	2.50 - 2.50	0.40 - 0.40	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833046	18833085	18833091	18833096	18833042	18833074
			AGS Reference						
VOC TIC		TM116		Not Detected &	Not Detected &	Detected &	Detected &	Not Detected &	Not Detected &
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 ♦	<0.4 ♦	<0.4 ♦	3.72 ♦	<0.4 ♦	<0.4 ♦
Total VOC TIC	<0.05 mg/kg	TM116		0	0	64.2	2.95	0	0
4,7-Methano-1H-indene, 3a,4,7,7a-tetrahydro-	mg/kg	TM116				64.2	2.39		
Indane	mg/kg	TM116					0.562		

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			4E-F10-V	2.50 - 2.50	Soil/Solid (S)	26/11/2018	00:00	28/11/2018	181128-38	18833078	
Dibromofluoromethane**	%	TM116	109 ♦								
Toluene-d8**	%	TM116	98 ♦								
4-Bromofluorobenzene**	%	TM116	96.5 ♦								
Dichlorodifluoromethane	<0.006 mg/kg	TM116	<0.06 & M								
Chloromethane	<0.007 mg/kg	TM116	<0.07 & #								
Vinyl Chloride	<0.006 mg/kg	TM116	<0.06 & M								
Bromomethane	<0.01 mg/kg	TM116	<0.1 & M								
Chloroethane	<0.01 mg/kg	TM116	<0.1 & M								
Trichlorofluorormethane	<0.006 mg/kg	TM116	<0.06 & M								
1,1-Dichloroethene	<0.01 mg/kg	TM116	<0.1 & #								
Carbon Disulphide	<0.007 mg/kg	TM116	<0.07 & M								
Dichloromethane	<0.01 mg/kg	TM116	<0.1 & #								
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116	<0.1 ♦ M								
trans-1,2-Dichloroethene	<0.01 mg/kg	TM116	<0.1 & M								
1,1-Dichloroethane	<0.008 mg/kg	TM116	<0.08 & M								
cis-1,2-Dichloroethene	<0.006 mg/kg	TM116	<0.06 & M								
2,2-Dichloropropane	<0.01 mg/kg	TM116	<0.1 &								
Bromochloromethane	<0.01 mg/kg	TM116	<0.1 & M								
Chloroform	<0.008 mg/kg	TM116	<0.08 & M								
1,1,1-Trichloroethane	<0.007 mg/kg	TM116	<0.07 & M								
1,1-Dichloropropene	<0.01 mg/kg	TM116	<0.1 & M								
Carbontetrachloride	<0.01 mg/kg	TM116	<0.1 & M								
1,2-Dichloroethane	<0.005 mg/kg	TM116	<0.05 & M								
Benzene	<0.009 mg/kg	TM116	<0.09 ♦ M								
Trichloroethene	<0.009 mg/kg	TM116	<0.09 & #								
1,2-Dichloropropane	<0.01 mg/kg	TM116	<0.1 & M								
Dibromomethane	<0.009 mg/kg	TM116	<0.09 & M								
Bromodichloromethane	<0.007 mg/kg	TM116	<0.07 & M								
cis-1,3-Dichloropropene	<0.01 mg/kg	TM116	<0.1 & M								
Toluene	<0.007 mg/kg	TM116	<0.07 ♦ M								
trans-1,3-Dichloropropene	<0.01 mg/kg	TM116	<0.1 &								
1,1,2-Trichloroethane	<0.01 mg/kg	TM116	<0.1 & M								
1,3-Dichloropropane	<0.007 mg/kg	TM116	<0.07 & M								

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4E-F10-V
Depth (m)	2.50 - 2.50
Sample Type	Soil/Solid (S)
Date Sampled	26/11/2018
Sample Time	00:00
Date Received	28/11/2018
SDG Ref	181128-38
Lab Sample No.(s)	18833078
AGS Reference	

Component	LOD/Units	Method	
Tetrachloroethene	<0.005 mg/kg	TM116	<0.05 & M
Dibromochloromethane	<0.01 mg/kg	TM116	<0.1 & M
1,2-Dibromoethane	<0.01 mg/kg	TM116	<0.1 & M
Chlorobenzene	<0.005 mg/kg	TM116	<0.05 & M
1,1,1,2-Tetrachloroethane	<0.01 mg/kg	TM116	<0.1 & M
Ethylbenzene	<0.004 mg/kg	TM116	<0.04 ♦ M
p/m-Xylene	<0.01 mg/kg	TM116	<0.1 ♦ #
o-Xylene	<0.01 mg/kg	TM116	<0.1 ♦ M
Styrene	<0.01 mg/kg	TM116	<0.1 & #
Bromoform	<0.01 mg/kg	TM116	<0.1 & M
Isopropylbenzene	<0.005 mg/kg	TM116	<0.05 & #
1,1,2,2-Tetrachloroethane	<0.01 mg/kg	TM116	<0.1 & #
1,2,3-Trichloropropane	<0.016 mg/kg	TM116	<0.16 & M
Bromobenzene	<0.01 mg/kg	TM116	<0.1 & M
Propylbenzene	<0.01 mg/kg	TM116	<0.1 & M
2-Chlorotoluene	<0.009 mg/kg	TM116	<0.09 & M
1,3,5-Trimethylbenzene	<0.008 mg/kg	TM116	<0.08 & M
4-Chlorotoluene	<0.01 mg/kg	TM116	<0.1 & M
tert-Butylbenzene	<0.014 mg/kg	TM116	<0.14 & M
1,2,4-Trimethylbenzene	<0.009 mg/kg	TM116	<0.09 & #
sec-Butylbenzene	<0.01 mg/kg	TM116	<0.1 &
4-Isopropyltoluene	<0.01 mg/kg	TM116	<0.1 & M
1,3-Dichlorobenzene	<0.008 mg/kg	TM116	<0.08 & M
1,4-Dichlorobenzene	<0.005 mg/kg	TM116	<0.05 & M
n-Butylbenzene	<0.011 mg/kg	TM116	<0.11 &
1,2-Dichlorobenzene	<0.01 mg/kg	TM116	<0.1 & M
1,2-Dibromo-3-chloropropane	<0.014 mg/kg	TM116	<0.14 & M
Tert-amyl methyl ether	<0.01 mg/kg	TM116	<0.1 & #
1,2,4-Trichlorobenzene	<0.02 mg/kg	TM116	<0.2 &
Hexachlorobutadiene	<0.02 mg/kg	TM116	<0.2 &
Naphthalene	<0.013 mg/kg	TM116	<0.13 ♦ M
1,2,3-Trichlorobenzene	<0.02 mg/kg	TM116	<0.2 & #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref. 4E-F10-V				
			Depth (m)	2.50 - 2.50			
			Sample Type	Soil/Solid (S)			
			Date Sampled	26/11/2018			
			Sample Time	00:00			
			Date Received	28/11/2018			
			SDG Ref	181128-38			
			Lab Sample No.(s)	18833078			
			AGS Reference				
VOC TIC		TM116	Not Detected &				
Sum of BTEX	<0.04 mg/kg	TM116	<0.4 ♦				
Total VOC TIC	<0.05 mg/kg	TM116	0				

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4E-D10
Depth (m)	1.70 - 1.70
Sample Type	Ground Water (GW)
Date Sampled	26/11/2018
Sample Time	00:00
Date Received	28/11/2018
SDG Ref	181128-38
Lab Sample No.(s)	18833111
AGS Reference	

Component	LOD/Units	Method	
Dibromofluoromethane**	%	TM208	0.66
Toluene-d8**	%	TM208	86.5
4-Bromofluorobenzene**	%	TM208	83.6
Dichlorodifluoromethane	<1 µg/l	TM208	<1
Chloromethane	<1 µg/l	TM208	<1 #
Vinyl chloride	<1 µg/l	TM208	<1 #
Bromomethane	<1 µg/l	TM208	<1 #
Chloroethane	<1 µg/l	TM208	<1 #
Trichlorofluoromethane	<1 µg/l	TM208	<1 #
1,1-Dichloroethene	<1 µg/l	TM208	<1 #
Carbon disulphide	<1 µg/l	TM208	1.15 #
Dichloromethane	<3 µg/l	TM208	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1 #
1,1-Dichloroethane	<1 µg/l	TM208	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1 #
2,2-Dichloropropane	<1 µg/l	TM208	<1
Bromochloromethane	<1 µg/l	TM208	<1 #
Chloroform	<1 µg/l	TM208	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208	<1 #
1,1-Dichloropropene	<1 µg/l	TM208	<1 #
Carbontetrachloride	<1 µg/l	TM208	<1 #
1,2-Dichloroethane	<1 µg/l	TM208	<1 #
Benzene	<1 µg/l	TM208	3480 #
Trichloroethene	<1 µg/l	TM208	<1 #
1,2-Dichloropropane	<1 µg/l	TM208	<1 #
Dibromomethane	<1 µg/l	TM208	<1 #
Bromodichloromethane	<1 µg/l	TM208	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1 #
Toluene	<1 µg/l	TM208	1320 #
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208	<1 #
1,3-Dichloropropane	<1 µg/l	TM208	<1 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4E-D10
Depth (m)	1.70 - 1.70
Sample Type	Ground Water (GW)
Date Sampled	26/11/2018
Sample Time	00:00
Date Received	28/11/2018
SDG Ref	181128-38
Lab Sample No.(s)	18833111
AGS Reference	

Component	LOD/Units	Method	
Tetrachloroethene	<1 µg/l	TM208	<1 #
Dibromochloromethane	<1 µg/l	TM208	<1 #
1,2-Dibromoethane	<1 µg/l	TM208	<1 #
Chlorobenzene	<1 µg/l	TM208	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #
Ethylbenzene	<1 µg/l	TM208	110 #
m,p-Xylene	<1 µg/l	TM208	3290 #
o-Xylene	<1 µg/l	TM208	284 #
Styrene	<1 µg/l	TM208	<1 #
Bromoform	<1 µg/l	TM208	<1 #
Isopropylbenzene	<1 µg/l	TM208	8.16 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #
Bromobenzene	<1 µg/l	TM208	<1 #
Propylbenzene	<1 µg/l	TM208	5 #
2-Chlorotoluene	<1 µg/l	TM208	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208	264 #
4-Chlorotoluene	<1 µg/l	TM208	<1 #
tert-Butylbenzene	<1 µg/l	TM208	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208	249 #
sec-Butylbenzene	<1 µg/l	TM208	1.06 #
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #
n-Butylbenzene	<1 µg/l	TM208	<1 ♦ #
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #
Hexachlorobutadiene	<1 µg/l	TM208	<1 ♦ #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #
Naphthalene	<1 µg/l	TM208	29300 3 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4E-D10
Depth (m)	1.70 - 1.70
Sample Type	Ground Water (GW)
Date Sampled	26/11/2018
Sample Time	00:00
Date Received	28/11/2018
SDG Ref	181128-38
Lab Sample No.(s)	18833111
AGS Reference	

Component	LOD/Units	Method	
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1
VOC TIC		TM208	Detected 1
Sum of detected Xylenes	<2 µg/l	TM208	3570
Total VOC TIC	<10 µg/l	TM208	3470 1
Benzo[b]thiophene	µg/l	TM208	79
Cyclopentene	µg/l	TM208	20.8
Dodecane	µg/l	TM208	49.1
Indane	µg/l	TM208	538
Indene	µg/l	TM208	120
Methyl Ethyl Benzene isomer	µg/l	TM208	32
Methyl Propenyl Benzene isomer	µg/l	TM208	32.7
Mixed Hydrocarbons	µg/l	TM208	56.8
Tetrahydro Methano indene Isomer	µg/l	TM208	2440
Tridecane	µg/l	TM208	43
Undecane	µg/l	TM208	56.1

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C10 0.50 - 0.50 SOLID 26/11/2018 00:00:00 28/11/2018 11:16:00 181128-38 18833052 TM048	11/12/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C10 2.00 - 2.00 SOLID 26/11/2018 00:00:00 28/11/2018 11:16:00 181128-38 18833063 TM048	11/12/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D10 1.00 - 1.00 SOLID 26/11/2018 00:00:00 28/11/2018 11:16:00 181128-38 18833106 TM048	11/12/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E10 0.40 - 0.40 SOLID 26/11/2018 00:00:00 28/11/2018 11:16:00 181128-38 18833085 TM048	11/12/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E10 1.50 - 1.50 SOLID 26/11/2018 00:00:00 28/11/2018 11:16:00 181128-38 18833091 TM048	11/12/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-F10 0.40 - 0.40 SOLID 26/11/2018 00:00:00 28/11/2018 11:16:00 181128-38 18833042 TM048	11/12/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-F10 1.00 - 1.00 SOLID 26/11/2018 00:00:00 28/11/2018 11:16:00 181128-38 18833074 TM048	11/12/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833042
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-F10
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000105	<0.00001	0.000105	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0017	<0.0005	0.017	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00157	<0.001	0.0157	<0.01	-	-	-
Copper	0.00247	<0.0003	0.0247	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00222	<0.001	0.0222	<0.01	-	-	-
Vanadium	0.0461	<0.001	0.461	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0194	<0.019	0.194	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000217	<0.00001	0.000217	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000356	<0.000005	0.000356	<0.00005	-	-	-
Fluoranthene by GCMS	0.000438	<0.000005	0.00438	<0.00005	-	-	-
Anthracene by GCMS	0.0000519	<0.000005	0.000519	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000601	<0.000005	0.000601	<0.00005	-	-	-
Fluorene by GCMS	0.0000412	<0.000005	0.000412	<0.00005	-	-	-
Chrysene by GCMS	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Pyrene by GCMS	0.000292	<0.000005	0.00292	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000098	<0.000005	0.00098	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000164	<0.000005	0.00164	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000619	<0.000005	0.000619	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000951	<0.000002	0.000951	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000254	<0.000005	0.000254	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000987	<0.000005	0.000987	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000728	<0.000005	0.000728	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00168	<0.000082	0.0168	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	9.27
Conductivity (µS/cm)	87.10
Temperature (°C)	18.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

16/01/2019 15:49:00

15:48:32 16/01/2019

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833042
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-F10
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	9.27
Conductivity (µS/cm)	87.10
Temperature (°C)	18.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

16/01/2019 15:49:00

15:48:32 16/01/2019

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833052
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-C10
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000276	<0.00001	0.000276	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00236	<0.0005	0.0236	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00133	<0.001	0.0133	<0.01	-	-	-
Copper	0.00311	<0.0003	0.0311	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00227	<0.001	0.0227	<0.01	-	-	-
Vanadium	0.124	<0.001	1.24	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000357	<0.00001	0.000357	<0.0001	-	-	-
Acenaphthene by GCMS	0.000067	<0.000005	0.00067	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000309	<0.000005	0.000309	<0.00005	-	-	-
Anthracene by GCMS	0.00000869	<0.000005	0.0000869	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Fluorene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000351	<0.000005	0.000351	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0002	<0.000082	0.002	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Nov-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	230.00
Temperature (°C)	17.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

16/01/2019 15:49:00

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833052
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-C10
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Nov-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	230.00
Temperature (°C)	17.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833057
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-C10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00147	<0.0005	0.0147	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00045	<0.0004	0.0045	<0.004	-	-	-
Selenium	0.00492	<0.001	0.0492	<0.01	-	-	-
Vanadium	0.0332	<0.001	0.332	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000736	<0.00001	0.000736	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000796	<0.000005	0.000796	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Anthracene by GCMS	0.0000195	<0.000005	0.000195	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000641	<0.000005	0.000641	<0.00005	-	-	-
Fluorene by GCMS	0.0000356	<0.000005	0.000356	<0.00005	-	-	-
Chrysene by GCMS	0.0000535	<0.000005	0.000535	<0.00005	-	-	-
Pyrene by GCMS	0.0000877	<0.000005	0.000877	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000444	<0.000005	0.000444	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000948	<0.000005	0.000948	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000329	<0.000005	0.000329	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000578	<0.000002	0.000578	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000705	<0.000005	0.000705	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000471	<0.000005	0.000471	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00088	<0.000082	0.0088	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Nov-2018
pH (pH Units)	6.65
Conductivity (µS/cm)	939.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833057
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-C10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Nov-2018
pH (pH Units)	6.65
Conductivity (µS/cm)	939.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.6
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833063
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-C10
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00209	<0.0005	0.0209	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00262	<0.0003	0.0262	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000723	<0.0004	0.00723	<0.004	-	-	-
Selenium	0.00373	<0.001	0.0373	<0.01	-	-	-
Vanadium	0.0599	<0.001	0.599	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.477	<0.019	4.77	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000113	<0.00001	0.00113	<0.0001	-	-	-
Acenaphthene by GCMS	0.000198	<0.000005	0.00198	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000078	<0.000005	0.000078	<0.00005	-	-	-
Fluoranthene by GCMS	0.000125	<0.000005	0.00125	<0.00005	-	-	-
Anthracene by GCMS	0.0000311	<0.000005	0.000311	<0.00005	-	-	-
Phenanthrene by GCMS	0.000179	<0.000005	0.00179	<0.00005	-	-	-
Fluorene by GCMS	0.0000686	<0.000005	0.000686	<0.00005	-	-	-
Chrysene by GCMS	0.0000077	<0.000005	0.000077	<0.00005	-	-	-
Pyrene by GCMS	0.000106	<0.000005	0.00106	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000918	<0.000005	0.0000918	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000693	<0.000005	0.0000693	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000327	<0.000002	0.0000327	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000855	<0.000082	0.00855	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Dec-2018
pH (pH Units)	10.30
Conductivity (µS/cm)	376.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.6
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833063
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-C10
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Dec-2018
pH (pH Units)	10.30
Conductivity (µS/cm)	376.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833074
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-F10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.000121	<0.00001	0.00121	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00102	<0.0005	0.0102	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00218	<0.001	0.0218	<0.01	-	-	-
Copper	0.00629	<0.0003	0.0629	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000713	<0.0004	0.00713	<0.004	-	-	-
Selenium	0.00228	<0.001	0.0228	<0.01	-	-	-
Vanadium	0.0832	<0.001	0.832	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000591	<0.00001	0.000591	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000555	<0.000005	0.000555	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000692	<0.000005	0.00692	<0.00005	-	-	-
Anthracene by GCMS	0.000079	<0.000005	0.00079	<0.00005	-	-	-
Phenanthrene by GCMS	0.000271	<0.000005	0.00271	<0.00005	-	-	-
Fluorene by GCMS	0.0000557	<0.000005	0.000557	<0.00005	-	-	-
Chrysene by GCMS	0.0000584	<0.000005	0.000584	<0.00005	-	-	-
Pyrene by GCMS	0.00104	<0.000005	0.0104	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000046	<0.000005	0.00046	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000059	<0.000005	0.000059	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000595	<0.000002	0.0000595	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00238	<0.000082	0.0238	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	11.00
Conductivity (µS/cm)	500.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833074
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-F10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	11.00
Conductivity (µS/cm)	500.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833085
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-E10
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00222	<0.0005	0.0222	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00115	<0.001	0.0115	<0.01	-	-	-
Copper	0.00104	<0.0003	0.0104	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000482	<0.0004	0.00482	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0578	<0.001	0.578	<0.01	-	-	-
Zinc	0.00613	<0.001	0.0613	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000962	<0.000005	0.0000962	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	10.16
Conductivity (µS/cm)	122.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833085
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-E10
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	10.16
Conductivity (µS/cm)	122.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833091
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-E10
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000211	<0.00001	0.000211	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00351	<0.0005	0.0351	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00121	<0.001	0.0121	<0.01	-	-	-
Copper	0.00445	<0.0003	0.0445	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00235	<0.0004	0.0235	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0125	<0.001	0.125	<0.01	-	-	-
Zinc	0.00222	<0.001	0.0222	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0155	<0.00001	0.155	<0.0001	-	-	-
Acenaphthene by GCMS	0.000469	<0.000005	0.00469	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000172	<0.000005	0.00172	<0.00005	-	-	-
Fluoranthene by GCMS	0.00125	<0.000005	0.0125	<0.00005	-	-	-
Anthracene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Phenanthrene by GCMS	0.00203	<0.000005	0.0203	<0.00005	-	-	-
Fluorene by GCMS	0.000192	<0.000005	0.00192	<0.00005	-	-	-
Chrysene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Pyrene by GCMS	0.000948	<0.000005	0.00948	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000942	<0.000005	0.000942	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000426	<0.000005	0.000426	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000186	<0.000005	0.000186	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000182	<0.000002	0.000182	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000025	<0.000005	0.00025	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.021	<0.000082	0.21	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	30.5	<0.05	305	<0.5	-	-	-
Aliphatics C5-C6	0.033	<0.01	0.33	<0.1	-	-	-
Aliphatics >C6-C8	0.023	<0.01	0.23	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	2.72
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833091
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-E10
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.077	<0.01	0.77	<0.1	-	-	-
Aliphatics >C10-C12	18.2	<0.01	182	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.018	<0.01	0.18	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.076	<0.01	0.76	<0.1	-	-	-
Aromatics >EC10-EC12	12.1	<0.01	121	<0.1	-	-	-
Aromatics >EC12-EC16	0.228	<0.01	2.28	<0.1	-	-	-
Aromatics >EC16-EC21	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.247	<0.01	2.47	<0.1	-	-	-
Benzene by GC	0.018	<0.007	0.18	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	30.8	<0.01	308	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.018	<0.008	0.18	<0.08	-	-	-
o Xylene by GC	0.005	<0.003	0.05	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.023	<0.011	0.23	<0.11	-	-	-
Sum of BTEX by GC	0.041	<0.028	0.41	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	2.72
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	1.94
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.1
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833100
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-D10
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000201	<0.00001	0.000201	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000534	<0.0005	0.00534	<0.005	-	-	-
Cadmium	0.0000885	<0.00008	0.000885	<0.0008	-	-	-
Chromium	0.00248	<0.001	0.0248	<0.01	-	-	-
Copper	0.00184	<0.0003	0.0184	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00371	<0.003	0.0371	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00138	<0.001	0.0138	<0.01	-	-	-
Vanadium	0.0723	<0.001	0.723	<0.01	-	-	-
Zinc	0.038	<0.001	0.38	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.533	<0.019	5.33	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000506	<0.00001	0.00506	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000614	<0.000005	0.000614	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000136	<0.000005	0.000136	<0.00005	-	-	-
Fluoranthene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Anthracene by GCMS	0.0000668	<0.000005	0.000668	<0.00005	-	-	-
Phenanthrene by GCMS	0.000241	<0.000005	0.00241	<0.00005	-	-	-
Fluorene by GCMS	0.0000285	<0.000005	0.000285	<0.00005	-	-	-
Chrysene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Pyrene by GCMS	0.000123	<0.000005	0.00123	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000732	<0.000005	0.0000732	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000937	<0.000005	0.0000937	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000529	<0.000005	0.0000529	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0012	<0.000082	0.012	<0.00082	-	-	-

Leach Test Information

Date Prepared	07-Dec-2018
pH (pH Units)	11.05
Conductivity (µS/cm)	472.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833106
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-D10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000731	<0.0005	0.00731	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000437	<0.0003	0.00437	<0.003	-	-	-
Lead	0.00119	<0.0002	0.0119	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00481	<0.001	0.0481	<0.01	-	-	-
Vanadium	0.0434	<0.001	0.434	<0.01	-	-	-
Zinc	0.00138	<0.001	0.0138	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000103	<0.00001	0.00103	<0.0001	-	-	-
Acenaphthene by GCMS	0.000238	<0.000005	0.00238	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000151	<0.000005	0.00151	<0.00005	-	-	-
Anthracene by GCMS	0.0000451	<0.000005	0.000451	<0.00005	-	-	-
Phenanthrene by GCMS	0.000203	<0.000005	0.00203	<0.00005	-	-	-
Fluorene by GCMS	0.0000667	<0.000005	0.000667	<0.00005	-	-	-
Chrysene by GCMS	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Pyrene by GCMS	0.000238	<0.000005	0.00238	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000186	<0.000005	0.000186	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000728	<0.000005	0.0000728	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000285	<0.000002	0.0000285	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00109	<0.000082	0.0109	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Dec-2018
pH (pH Units)	10.64
Conductivity (µS/cm)	251.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833106
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-D10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Dec-2018
pH (pH Units)	10.64
Conductivity (µS/cm)	251.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Test Completion Dates

Lab Sample No(s)	18833052	18833057	18833063	18833070	18833100	18833106	18833111	18833046	18833085	18833091
Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10	4E-D10	4E-D10-V	4E-E10	4E-E10
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Ground Water	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	10-Dec-2018		10-Dec-2018			10-Dec-2018			10-Dec-2018	10-Dec-2018
Ammoniacal Nitrogen	07-Dec-2018	06-Dec-2018	11-Dec-2018		11-Dec-2018	11-Dec-2018	07-Dec-2018		07-Dec-2018	07-Dec-2018
Ammonium Soil by Titration	11-Dec-2018	11-Dec-2018	07-Dec-2018	07-Dec-2018	11-Dec-2018	11-Dec-2018		11-Dec-2018	07-Dec-2018	11-Dec-2018
Anions by Kone (soil)	12-Dec-2018		12-Dec-2018			12-Dec-2018			05-Dec-2018	12-Dec-2018
Asbestos ID in Solid Samples	11-Dec-2018		11-Dec-2018			11-Dec-2018			11-Dec-2018	11-Dec-2018
CEN 10:1 Leachate (1 Stage)	30-Nov-2018	30-Nov-2018	07-Dec-2018		07-Dec-2018	07-Dec-2018			29-Nov-2018	29-Nov-2018
CEN Readings	01-Dec-2018	01-Dec-2018	11-Dec-2018		11-Dec-2018	11-Dec-2018			01-Dec-2018	01-Dec-2018
Cyanide Comp/Free/Total/Thiocyanate	13-Dec-2018	13-Dec-2018	13-Dec-2018	13-Dec-2018	13-Dec-2018	13-Dec-2018	06-Dec-2018	13-Dec-2018	13-Dec-2018	13-Dec-2018
Dissolved Metals by ICP-MS	12-Dec-2018	13-Dec-2018	12-Dec-2018		12-Dec-2018	11-Dec-2018			12-Dec-2018	12-Dec-2018
EPH CWG (Aliphatic) Aqueous GC (W)	12-Dec-2018	11-Dec-2018	12-Dec-2018			12-Dec-2018			11-Dec-2018	12-Dec-2018
EPH CWG (Aliphatic) Filtered GC (W)							04-Dec-2018			
EPH CWG (Aliphatic) GC (S)	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018		10-Dec-2018	10-Dec-2018	10-Dec-2018
EPH CWG (Aromatic) Aqueous GC (W)	12-Dec-2018	11-Dec-2018	12-Dec-2018			12-Dec-2018			11-Dec-2018	12-Dec-2018
EPH CWG (Aromatic) Filtered GC (W)							04-Dec-2018			
EPH CWG (Aromatic) GC (S)	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018		10-Dec-2018	10-Dec-2018	10-Dec-2018
GRO by GC-FID (S)	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018		12-Dec-2018	12-Dec-2018	12-Dec-2018
GRO by GC-FID (W)	07-Dec-2018	07-Dec-2018	12-Dec-2018			12-Dec-2018	13-Dec-2018		07-Dec-2018	07-Dec-2018
Low Level Cyanide (W)							04-Dec-2018			
Mercury Dissolved	12-Dec-2018	10-Dec-2018	12-Dec-2018		12-Dec-2018	12-Dec-2018			12-Dec-2018	12-Dec-2018
Metals in solid samples by OES	04-Dec-2018	12-Dec-2018	04-Dec-2018	11-Dec-2018	12-Dec-2018	04-Dec-2018		12-Dec-2018	04-Dec-2018	04-Dec-2018
PAH by GCMS	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018		12-Dec-2018	12-Dec-2018	12-Dec-2018
PAH in waters by GC-MS (diss.filt)							07-Dec-2018			
PAH Spec MS - Aqueous (W)	12-Dec-2018	11-Dec-2018	12-Dec-2018		12-Dec-2018	12-Dec-2018			11-Dec-2018	11-Dec-2018
pH	12-Dec-2018	11-Dec-2018	12-Dec-2018	11-Dec-2018	11-Dec-2018	12-Dec-2018		11-Dec-2018	12-Dec-2018	12-Dec-2018
pH Value	07-Dec-2018	06-Dec-2018	10-Dec-2018		10-Dec-2018	10-Dec-2018			07-Dec-2018	07-Dec-2018
Phenols by HPLC (S)	11-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018		12-Dec-2018	12-Dec-2018	12-Dec-2018
Phenols by HPLC (W)							12-Dec-2018			
Sample description	28-Nov-2018	28-Nov-2018	28-Nov-2018	28-Nov-2018	29-Nov-2018	28-Nov-2018		28-Nov-2018	28-Nov-2018	28-Nov-2018
Semi Volatile Organic Compounds	15-Jan-2019	15-Jan-2019	15-Jan-2019	15-Jan-2019	15-Jan-2019	15-Jan-2019		15-Jan-2019	15-Jan-2019	15-Jan-2019
SVOC MS (W) - Aqueous							16-Jan-2019			
Total Organic Carbon	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018		12-Dec-2018	12-Dec-2018	12-Dec-2018
Total Sulphate	11-Dec-2018		11-Dec-2018			11-Dec-2018			11-Dec-2018	13-Dec-2018
Total Sulphur	03-Dec-2018		04-Dec-2018			04-Dec-2018			03-Dec-2018	04-Jan-2019
TPH CWG (W)	12-Dec-2018	11-Dec-2018	12-Dec-2018			12-Dec-2018			11-Dec-2018	12-Dec-2018
TPH CWG Filtered (W)							13-Dec-2018			
TPH CWG GC (S)	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018		12-Dec-2018	12-Dec-2018	12-Dec-2018
VOC MS (S)	09-Jan-2019	09-Jan-2019	09-Jan-2019	09-Jan-2019	09-Jan-2019	09-Jan-2019		09-Jan-2019	09-Jan-2019	09-Jan-2019
VOC MS (W)							14-Jan-2019			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	488792
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	487410

Lab Sample No(s)	18833096	18833042	18833074	18833078
Customer Sample Ref.	4E-E10-V	4E-F10	4E-F10	4E-F10-V
AGS Ref.				
Depth	2.50 - 2.50	0.40 - 0.40	1.00 - 1.00	2.50 - 2.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		11-Dec-2018	10-Dec-2018	
Ammoniacal Nitrogen		07-Dec-2018	07-Dec-2018	
Ammonium Soil by Titration	07-Dec-2018	11-Dec-2018	07-Dec-2018	11-Dec-2018
Anions by Kone (soil)		12-Dec-2018	12-Dec-2018	
Asbestos ID in Solid Samples		11-Dec-2018	11-Dec-2018	
CEN 10:1 Leachate (1 Stage)		29-Nov-2018	29-Nov-2018	
CEN Readings		01-Dec-2018	01-Dec-2018	
Cyanide Comp/Free/Total/Thiocyanate	13-Dec-2018	13-Dec-2018	13-Dec-2018	13-Dec-2018
Dissolved Metals by ICP-MS		12-Dec-2018	12-Dec-2018	
EPH CWG (Aliphatic) Aqueous GC (W)		11-Dec-2018	12-Dec-2018	
EPH CWG (Aliphatic) GC (S)	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018
EPH CWG (Aromatic) Aqueous GC (W)		11-Dec-2018	12-Dec-2018	
EPH CWG (Aromatic) GC (S)	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018
GRO by GC-FID (S)	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018
GRO by GC-FID (W)		07-Dec-2018	12-Dec-2018	
Mercury Dissolved		12-Dec-2018	12-Dec-2018	
Metals in solid samples by OES	12-Dec-2018	04-Dec-2018	04-Dec-2018	11-Dec-2018
PAH by GCMS	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018
PAH Spec MS - Aqueous (W)		11-Dec-2018	11-Dec-2018	
pH	11-Dec-2018	12-Dec-2018	12-Dec-2018	11-Dec-2018
pH Value		07-Dec-2018	07-Dec-2018	
Phenols by HPLC (S)	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018
Sample description	29-Nov-2018	28-Nov-2018	28-Nov-2018	28-Nov-2018
Semi Volatile Organic Compounds	15-Jan-2019	15-Jan-2019	15-Jan-2019	15-Jan-2019
Total Organic Carbon	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018
Total Sulphate		11-Dec-2018	10-Dec-2018	
Total Sulphur		03-Dec-2018	03-Dec-2018	
TPH CWG (W)		11-Dec-2018	12-Dec-2018	
TPH CWG GC (S)	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018
VOC MS (S)	09-Jan-2019	09-Jan-2019	09-Jan-2019	09-Jan-2019

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date:	13 December 2018
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181128-38
Your Reference:	
Location:	Llanwern
Report No:	485164

We received 14 samples on Wednesday November 28, 2018 and 14 of these samples were scheduled for analysis which was completed on Thursday December 13, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18833052	4E-C10		0.50 - 0.50	26/11/2018
18833057	4E-C10		1.00 - 1.00	26/11/2018
18833063	4E-C10		2.00 - 2.00	26/11/2018
18833070	4E-C10-V		2.50 - 2.50	26/11/2018
18833100	4E-D10		0.50 - 0.50	26/11/2018
18833106	4E-D10		1.00 - 1.00	26/11/2018
18833111	4E-D10		1.70 - 1.70	26/11/2018
18833046	4E-D10-V		2.80 - 2.80	26/11/2018
18833085	4E-E10		0.40 - 0.40	26/11/2018
18833091	4E-E10		1.50 - 1.50	26/11/2018
18833096	4E-E10-V		2.50 - 2.50	26/11/2018
18833042	4E-F10		0.40 - 0.40	26/11/2018
18833074	4E-F10		1.00 - 1.00	26/11/2018
18833078	4E-F10-V		2.50 - 2.50	26/11/2018

Maximum Sample/Coolbox Temperature (°C) : **7.8**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18833052			18833057			18833063			18833070			18833100			18833106			18833111
Customer Sample Reference			4E-C10			4E-C10			4E-C10			4E-C10-V			4E-D10			4E-D10			4E-D10
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			2.50 - 2.50			0.50 - 0.50			1.00 - 1.00			1.70 - 1.70
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	0.5l glass bottle (ALE227)	1lplastic (ALE221)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	GW	GW
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 7		X						X								X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 10	X			X			X					X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 13		X			X			X		X			X			X			
Anions by Kone (soil)	All	NDPs: 0 Tests: 7		X						X								X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 7	X						X								X				
CEN Readings	All	NDPs: 0 Tests: 9	X			X			X					X			X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 23	X	X		X	X		X	X		X		X	X		X	X			X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 9	X			X			X					X			X				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8	X			X			X								X				
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 1																		X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 13		X			X			X		X			X			X			
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8	X			X			X								X				
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 1																		X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 13		X			X			X		X			X			X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 13			X			X			X		X			X			X		

18833078	4E-F10-V		2.50 - 2.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S				X				X					X				X	
18833074	4E-F10		1.00 - 1.00	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X			X		X				X					X			
				1kg TUB	S		X				X	X	X	X	X				X				
18833042	4E-F10		0.40 - 0.40	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X			X		X				X					X			
				1kg TUB	S		X				X	X	X	X	X				X				
18833096	4E-E10-V		2.50 - 2.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S				X				X					X				X	
18833091	4E-E10		1.50 - 1.50	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X			X		X				X					X			
				1kg TUB	S		X				X	X	X	X	X				X				
18833085	4E-E10		0.40 - 0.40	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S	X			X		X				X					X			
				1kg TUB	S		X				X	X	X	X	X				X				
18833046	4E-D10-V		2.80 - 2.80	60g VOC (ALE215)	S																	X
				250g Amber Jar (ALE210)	S				X				X					X				X	
18833111	4E-D10		1.70 - 1.70	Vial (ALE297)	GW																		

Validated

CERTIFICATE OF ANALYSIS

SDG: 181128-38 **Client Reference:** **Report Number:** 485164
Location: Llanwern **Order Number:** LLA527 **Superseded Report:**

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
GRO by GC-FID (W)	All	NDPs: 0 Tests: 9	18833052	4E-C10		0.50 - 0.50	1kg TUB	S
			18833057	4E-C10		1.00 - 1.00	1kg TUB	S
			18833063	4E-C10		2.00 - 2.00	1kg TUB	S
			18833070	4E-C10-V		2.50 - 2.50	1kg TUB	S
			18833100	4E-D10		0.50 - 0.50	1kg TUB	S
			18833106	4E-D10		1.00 - 1.00	1kg TUB	S
			18833111	4E-D10		1.70 - 1.70	1plastic (ALE221)	GW
Low Level Cyanide (W)	All	NDPs: 0 Tests: 1						
Mercury Dissolved	All	NDPs: 0 Tests: 9						
Metals in solid samples by OES	All	NDPs: 0 Tests: 13						
PAH by GCMS	All	NDPs: 0 Tests: 13						
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 1						
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 9						
pH	All	NDPs: 0 Tests: 13						
pH Value	All	NDPs: 0 Tests: 9						
Phenols by HPLC (S)	All	NDPs: 0 Tests: 13						
Phenols by HPLC (W)	All	NDPs: 0 Tests: 1						
Sample description	All	NDPs: 0 Tests: 13						
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 1						
Total Organic Carbon	All	NDPs: 0 Tests: 13						
Total Sulphate	All	NDPs: 0 Tests: 7						

18833078	4E-F10-V		2.50 - 2.50	60g VOC (ALE215)	S																	
				250g Amber Jar (ALE210)	S				x	x			x		x		x		x		
18833074	4E-F10		1.00 - 1.00	60g VOC (ALE215)	S																	
				250g Amber Jar (ALE210)	S				x	x			x		x		x		x		x
				1kg TUB	S	x		x				x		x								
18833042	4E-F10		0.40 - 0.40	60g VOC (ALE215)	S																	
				250g Amber Jar (ALE210)	S				x	x			x		x		x		x		x
				1kg TUB	S	x		x				x		x								
18833096	4E-E10-V		2.50 - 2.50	60g VOC (ALE215)	S																	
				250g Amber Jar (ALE210)	S				x	x			x		x		x		x		
18833091	4E-E10		1.50 - 1.50	60g VOC (ALE215)	S																	
				250g Amber Jar (ALE210)	S				x	x			x		x		x		x		x
				1kg TUB	S	x		x				x		x								
18833085	4E-E10		0.40 - 0.40	60g VOC (ALE215)	S																	
				250g Amber Jar (ALE210)	S				x	x			x		x		x		x		x
				1kg TUB	S	x		x				x		x								
18833046	4E-D10-V		2.80 - 2.80	60g VOC (ALE215)	S																	
				250g Amber Jar (ALE210)	S				x	x			x		x		x		x		
18833111	4E-D10		1.70 - 1.70	Vial (ALE297)	GW	x																

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			18833052			18833057			18833063			18833070			18833100			18833106			18833111
Customer Sample Reference			4E-C10			4E-C10			4E-C10			4E-C10-V			4E-D10			4E-D10			4E-D10
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00			2.00 - 2.00			2.50 - 2.50			0.50 - 0.50			1.00 - 1.00			1.70 - 1.70
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	0.5l glass bottle (ALE227)	1lplastic (ALE221)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	GW	GW
Total Sulphur	All	NDPs: 0 Tests: 6		X						X								X			
TPH CWG (W)	All	NDPs: 0 Tests: 8	X			X			X								X				
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 1																		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 13		X			X			X		X			X			X			
VOC MS (S)	All	NDPs: 0 Tests: 13			X			X			X		X			X			X		
VOC MS (W)	All	NDPs: 0 Tests: 1																			

18833078	4E-F10-V		2.50 - 2.50	60g VOC (ALE215)	S						X	
				250g Amber Jar (ALE210)	S					X		
18833074	4E-F10		1.00 - 1.00	60g VOC (ALE215)	S						X	
				250g Amber Jar (ALE210)	S	X				X		
				1kg TUB	S		X					
18833042	4E-F10		0.40 - 0.40	60g VOC (ALE215)	S						X	
				250g Amber Jar (ALE210)	S	X				X		
				1kg TUB	S		X					
18833096	4E-E10-V		2.50 - 2.50	60g VOC (ALE215)	S						X	
				250g Amber Jar (ALE210)	S					X		
18833091	4E-E10		1.50 - 1.50	60g VOC (ALE215)	S						X	
				250g Amber Jar (ALE210)	S					X		
				1kg TUB	S		X					
18833085	4E-E10		0.40 - 0.40	60g VOC (ALE215)	S						X	
				250g Amber Jar (ALE210)	S	X				X		
				1kg TUB	S		X					
18833046	4E-D10-V		2.80 - 2.80	60g VOC (ALE215)	S						X	
				250g Amber Jar (ALE210)	S					X		
18833111	4E-D10		1.70 - 1.70	Vial (ALE297)	GW							X

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18833052	4E-C10	0.50 - 0.50	Dark Brown	Sandy Loam	Vegetation	Stones
18833057	4E-C10	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18833063	4E-C10	2.00 - 2.00	Dark Brown	Sandy Loam	Vegetation	Stones
18833070	4E-C10-V	2.50 - 2.50	Dark Brown	Sandy Loam	Vegetation	Stones
18833100	4E-D10	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
18833106	4E-D10	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18833046	4E-D10-V	2.80 - 2.80	Dark Brown	Sandy Loam	Vegetation	Stones
18833085	4E-E10	0.40 - 0.40	Dark Brown	Sandy Loam	Vegetation	Stones
18833091	4E-E10	1.50 - 1.50	Dark Brown	Sandy Loam	Vegetation	Stones
18833096	4E-E10-V	2.50 - 2.50	Dark Brown	Sandy Clay	Stones	Vegetation
18833042	4E-F10	0.40 - 0.40	Dark Brown	Sand	Vegetation	Stones
18833074	4E-F10	1.00 - 1.00	Dark Brown	Sandy Loam	Vegetation	Stones
18833078	4E-F10-V	2.50 - 2.50	Dark Brown	Sandy Loam	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833052	18833057	18833063	18833070	18833100	18833106
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.1	11	8.4	31	1.9	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	223 M	19.4 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.0983		0.524			0.22
Sulphate, Total potential	<0.06 %	TM132		0.295		1.57			0.66
Soil Organic Matter (SOM)	<0.35 %	TM132		9.79 #	3.9 #	2.67 #	4.91 #	2.47 #	3.45 #
pH	1 pH Units	TM133		10.5 M	8.39 M	10.1 M	7.84 M	11.4 M	10.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 ♦ M	<1 ♦ M	2.28 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Cyanide, Free	<1 mg/kg	TM153		<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Arsenic	<0.6 mg/kg	TM181		9.99 M	4.72 M	10 M	17.2 M	11 M	4.97 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	<0.2 M	0.269 M	0.562 M	0.281 M
Chromium	<0.9 mg/kg	TM181		267 M	3.69 M	10.3 M	33.9 M	137 M	24.5 M
Copper	<1.4 mg/kg	TM181		54.5 M	<1.4 M	56.5 M	15.9 M	19.8 M	6.71 M
Iron	<1000 mg/kg	TM181		179000 #	4940 #	170000 #	33200 #	144000 #	44100 #
Lead	<0.7 mg/kg	TM181		67.5 M	1.18 M	54.4 M	41.1 M	52.8 M	105 M
Manganese	<0.13 mg/kg	TM181		10600 M	3730 M	3660 M	563 M	11100 M	5400 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		34.9 M	1.66 M	32.6 M	33.4 M	22 M	6.8 M
Selenium	<1 mg/kg	TM181		<10 #	6.08 #	<10 #	1.7 #	7.47 #	3.59 #
Vanadium	<0.2 mg/kg	TM181		224 #	23.2 #	71 #	57.5 #	163 #	77.5 #
Zinc	<1.9 mg/kg	TM181		277 M	11.3 M	188 M	136 M	234 M	572 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.185		0.382			1.05
Calcium	<21 mg/kg	TM224		153000		75800			194000
Magnesium	<8 mg/kg	TM224		26200		9830			31100
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0853 M		0.475 M			0.102 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D10	4E-D10-V	4E-E10	4E-E10	4E-E10-V	4E-F10
			Depth (m)	1.70 - 1.70	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50	2.50 - 2.50	0.40 - 0.40
			Sample Type	Ground Water (GW)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833111	18833046	18833085	18833091	18833096	18833042
			AGS Reference						
Ammoniacal Nitrogen as NH3	<0.2 mg/l	TM099		0.908 2 #					
Naphthalene (diss.filt)	<0.01 µg/l	TM178		4520					
Acenaphthene (diss.filt)	<0.005 µg/l	TM178		138					
Acenaphthylene (diss.filt)	<0.005 µg/l	TM178		46.9					
Fluoranthene (diss.filt)	<0.005 µg/l	TM178		34.6					
Anthracene (diss.filt)	<0.005 µg/l	TM178		43.3					
Phenanthrene (diss.filt)	<0.005 µg/l	TM178		53.7					
Fluorene (diss.filt)	<0.005 µg/l	TM178		77.9					
Chrysene (diss.filt)	<0.005 µg/l	TM178		29.3					
Pyrene (diss.filt)	<0.005 µg/l	TM178		31.7					
Benzo(a)anthracene (diss.filt)	<0.005 µg/l	TM178		23.6					
Benzo(b)fluoranthene (diss.filt)	<0.005 µg/l	TM178		21					
Benzo(k)fluoranthene (diss.filt)	<0.005 µg/l	TM178		23.6					
Benzo(a)pyrene (diss.filt)	<0.002 µg/l	TM178		28.9					
Dibenzo(a,h)anthracene (diss.filt)	<0.005 µg/l	TM178		31.5					
Benzo(g,h,i)perylene (diss.filt)	<0.005 µg/l	TM178		24.3					
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.005 µg/l	TM178		26.2					
PAH Sum of EPA 16 detected (Diss filt)	<0.082 µg/l	TM178		5160					
Cyanide, Total	<0.05 mg/l	TM227		<0.05 2 #					
Cyanide, Free	<0.05 mg/l	TM227		<0.05 2 #					
Thiocyanate	<0.05 mg/l	TM227		<0.05 2 #					
Phenol	<0.002 mg/l	TM259		<0.002 2 #					
Cresols	<0.006 mg/l	TM259		<0.006 2 #					
Xylenols	<0.008 mg/l	TM259		<0.008 2 #					
Phenols, Total Detected monohydric	<0.016 mg/l	TM259		<0.016 2 #					
Cyanide, Total (low level)	<5 µg/l	TM279		24.1 2 #					
Cyanide, Free (low level)	<2.5 µg/l	TM279		<2.5 2 #					
Cyanide, Complex (low level)*	<5 µg/l	TM279		24.1 2					
Moisture Content Ratio (% of as received sample)	%	PM024			33	8.2	9.3	23	6.8
Exchangeable Ammonia as N	<12 mg/kg	TM024			227 M	<12 M	<12 M	126 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)			<0.01 M	<0.01 M	0.011 M	0.013 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)			<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)			<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M

Validated

CERTIFICATE OF ANALYSIS

SDG: 181128-38 **Client Reference:** **Report Number:** 485164
Location: Llanwern **Order Number:** LLA527 **Superseded Report:**

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D10	4E-D10-V	4E-E10	4E-E10	4E-E10-V	4E-F10
			Depth (m)	1.70 - 1.70	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50	2.50 - 2.50	0.40 - 0.40
			Sample Type	Ground Water (GW)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833111	18833046	18833085	18833091	18833096	18833042
			AGS Reference						
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)			<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132				0.142			0.302
Sulphate, Total potential	<0.06 %	TM132				0.426			0.906
Soil Organic Matter (SOM)	<0.35 %	TM132			5.28 #	6.74 #	3.21 #	2.97 #	2.43 #
pH	1 pH Units	TM133			7.73 M	9.69 M	11.6 M	7.9 M	9.92 M
Cyanide, Total	<1 mg/kg	TM153			<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	1.25 ♦ M
Cyanide, Free	<1 mg/kg	TM153			<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Arsenic	<0.6 mg/kg	TM181			17.7 M	10.9 M	6.05 M	13.6 M	81.7 M
Cadmium	<0.02 mg/kg	TM181			0.271 M	<0.2 M	<0.2 M	0.0786 M	<0.2 M
Chromium	<0.9 mg/kg	TM181			34.4 M	129 M	525 M	37 M	86.7 M
Copper	<1.4 mg/kg	TM181			18.5 M	19.7 M	18.3 M	12.9 M	41.1 M
Iron	<1000 mg/kg	TM181			36400 #	189000 #	147000 #	34100 #	61700 #
Lead	<0.7 mg/kg	TM181			41.4 M	29.9 M	9.99 M	31.5 M	46.2 M
Manganese	<0.13 mg/kg	TM181			477 M	7510 M	32800 M	414 M	34700 M
Mercury	<0.14 mg/kg	TM181			<0.14 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181			34.4 M	56.6 M	13.4 M	35.2 M	88.3 M
Selenium	<1 mg/kg	TM181			1.88 #	<10 #	21 #	1.52 #	24.8 #
Vanadium	<0.2 mg/kg	TM181			54.5 #	123 #	416 #	58.8 #	183 #
Zinc	<1.9 mg/kg	TM181			156 M	236 M	38.6 M	105 M	188 M
Sulphate, acid soluble (total)	<0.02 %	TM221				0.102	3.43		0.309
Calcium	<21 mg/kg	TM224				101000	226000		203000
Magnesium	<8 mg/kg	TM224				17400	7200		23800
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243				0.063 M	1.46 M		0.0706 M

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-F10	4E-F10-V				
			Depth (m)	1.00 - 1.00	2.50 - 2.50				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	26/11/2018	26/11/2018				
			Sample Time	00:00	00:00				
			Date Received	28/11/2018	28/11/2018				
			SDG Ref	181128-38	181128-38				
			Lab Sample No.(s)	18833074	18833078				
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9	25				
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	169 M				
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M				
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M				
Sulphur, Total	<0.02 %	TM132		0.466					
Sulphate, Total potential	<0.06 %	TM132		1.4					
Soil Organic Matter (SOM)	<0.35 %	TM132		2.57 #	1.27 #				
pH	1 pH Units	TM133		11.3 M	7.76 M				
Cyanide, Total	<1 mg/kg	TM153		1.67 ♦ M	<1 ♦ M				
Cyanide, Free	<1 mg/kg	TM153		<1 ♦ M	<1 ♦ M				
Arsenic	<0.6 mg/kg	TM181		4.05 M	21.8 M				
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.0827 M				
Chromium	<0.9 mg/kg	TM181		52.4 M	34.9 M				
Copper	<1.4 mg/kg	TM181		25.8 M	11.5 M				
Iron	<1000 mg/kg	TM181		45900 #	42900 #				
Lead	<0.7 mg/kg	TM181		13.6 M	33.4 M				
Manganese	<0.13 mg/kg	TM181		6820 M	311 M				
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M				
Nickel	<0.2 mg/kg	TM181		8.26 M	41 M				
Selenium	<1 mg/kg	TM181		4.12 #	<1 #				
Vanadium	<0.2 mg/kg	TM181		149 #	58.2 #				
Zinc	<1.9 mg/kg	TM181		94.2 M	113 M				
Sulphate, acid soluble (total)	<0.02 %	TM221		0.507					
Calcium	<21 mg/kg	TM224		192000					
Magnesium	<8 mg/kg	TM224		21200					
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.213 M					

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833052	18833057	18833063	18833070	18833100	18833106
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91	89.4	93.2	92	91.7	89.3
Acenaphthene-d10 % recovery**	%	TM218		86.4	80.5	94.8	89.3	92.8	83.9
Phenanthrene-d10 % recovery**	%	TM218		89.7	77.5	90.7	84.8	88.9	82.8
Chrysene-d12 % recovery**	%	TM218		80.4	72.2	80.8	77.3	81.7	79
Perylene-d12 % recovery**	%	TM218		75.8	72.4	78.3	84.8	82.4	82.2
Naphthalene	<0.009 mg/kg	TM218		0.229 ♦ M	<0.09 ♦ M	0.205 ♦ M	0.0136 ♦ M	0.353 ♦ M	<0.09 ♦ M
Acenaphthylene	<0.012 mg/kg	TM218		0.0663 ♦ M	<0.12 ♦ M	0.0503 ♦ M	<0.012 ♦ M	0.0612 ♦ M	<0.12 ♦ M
Acenaphthene	<0.008 mg/kg	TM218		0.0149 ♦ M	<0.08 ♦ M	0.0497 ♦ M	<0.008 ♦ M	0.0311 ♦ M	<0.08 ♦ M
Fluorene	<0.01 mg/kg	TM218		0.0448 ♦ M	<0.1 ♦ M	0.0541 ♦ M	<0.01 ♦ M	0.0295 ♦ M	<0.1 ♦ M
Phenanthrene	<0.015 mg/kg	TM218		0.425 ♦ M	0.213 ♦ M	0.429 ♦ M	0.0279 ♦ M	0.393 ♦ M	0.223 ♦ M
Anthracene	<0.016 mg/kg	TM218		0.0995 ♦ M	<0.16 ♦ M	0.11 ♦ M	<0.016 ♦ M	0.114 ♦ M	<0.16 ♦ M
Fluoranthene	<0.017 mg/kg	TM218		0.531 ♦ M	0.393 ♦ M	0.605 ♦ M	0.055 ♦ M	0.822 ♦ M	0.804 ♦ M
Pyrene	<0.015 mg/kg	TM218		0.444 ♦ M	0.31 ♦ M	0.564 ♦ M	0.0439 ♦ M	0.732 ♦ M	1.95 ♦ M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.262 ♦ M	0.198 ♦ M	0.236 ♦ M	0.0294 ♦ M	0.488 ♦ M	0.622 ♦ M
Chrysene	<0.01 mg/kg	TM218		0.228 ♦ M	0.153 ♦ M	0.246 ♦ M	0.0253 ♦ M	0.481 ♦ M	0.56 ♦ M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.288 ♦ M	0.299 ♦ M	0.253 ♦ M	0.0356 ♦ M	0.708 ♦ M	0.806 ♦ M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.114 ♦ M	<0.14 ♦ M	0.105 ♦ M	<0.014 ♦ M	0.235 ♦ M	0.177 ♦ M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.223 ♦ M	0.272 ♦ M	0.214 ♦ M	0.0288 ♦ M	0.51 ♦ M	0.565 ♦ M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.195 ♦ M	0.315 ♦ M	0.185 ♦ M	<0.018 ♦ M	0.46 ♦ M	0.462 ♦ M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0398 ♦ M	<0.23 ♦ M	0.0393 ♦ M	<0.023 ♦ M	0.0868 ♦ M	<0.23 ♦ M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.187 ♦ M	0.386 ♦ M	0.2 ♦ M	<0.024 ♦ M	0.416 ♦ M	0.476 ♦ M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		3.39	2.54	3.55	0.259	5.92	6.64

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D10-V	4E-E10	4E-E10	4E-E10-V	4E-F10	4E-F10
			Depth (m)	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50	2.50 - 2.50	0.40 - 0.40	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833046	18833085	18833091	18833096	18833042	18833074
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.2	92.9	90.6	92.8	93.3	87.9
Acenaphthene-d10 % recovery**	%	TM218		90.3	88.6	90.5	90.2	92.7	88.6
Phenanthrene-d10 % recovery**	%	TM218		87.1	83.4	86.8	87.5	89.7	91.3
Chrysene-d12 % recovery**	%	TM218		79.7	72.3	77.7	91.6	96.8	103
Perylene-d12 % recovery**	%	TM218		86.9	72.4	83.6	86.1	96.6	109
Naphthalene	<0.009 mg/kg	TM218		0.458 ♦ M	0.089 ♦ M	0.411 ♦ M	2.45 ♦ M	0.227 ♦ M	0.121 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 ♦ M	0.0286 ♦ M	0.0167 ♦ M	<0.012 ♦ M	0.364 ♦ M	0.448 M
Acenaphthene	<0.008 mg/kg	TM218		0.0139 ♦ M	<0.008 ♦ M	0.0431 ♦ M	<0.008 ♦ M	0.0638 ♦ M	0.0328 M
Fluorene	<0.01 mg/kg	TM218		<0.01 ♦ M	0.0392 ♦ M	0.0316 ♦ M	0.023 ♦ M	0.0554 ♦ M	0.0627 M
Phenanthrene	<0.015 mg/kg	TM218		0.0335 ♦ M	0.18 ♦ M	0.696 ♦ M	<0.015 ♦ M	0.762 ♦ M	1.17 M
Anthracene	<0.016 mg/kg	TM218		<0.016 ♦ M	0.295 ♦ M	0.0704 ♦ M	<0.016 ♦ M	0.23 ♦ M	0.399 M
Fluoranthene	<0.017 mg/kg	TM218		0.0429 ♦ M	0.215 ♦ M	1.53 ♦ M	<0.017 ♦ M	2.88 ♦ M	5.58 M
Pyrene	<0.015 mg/kg	TM218		0.0326 ♦ M	0.17 ♦ M	1.49 ♦ M	<0.015 ♦ M	2.43 ♦ M	4.98 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 ♦ M	0.129 ♦ M	1.17 ♦ M	<0.014 ♦ M	2.02 ♦ M	3.48 M
Chrysene	<0.01 mg/kg	TM218		0.0226 ♦ M	0.14 ♦ M	1.21 ♦ M	<0.01 ♦ M	1.93 ♦ M	2.56 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0282 ♦ M	0.151 ♦ M	1.75 ♦ M	<0.015 ♦ M	3.46 ♦ M	3.92 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 ♦ M	0.0517 ♦ M	0.637 ♦ M	<0.014 ♦ M	1.19 ♦ M	1.47 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 ♦ M	0.129 ♦ M	1.63 ♦ M	<0.015 ♦ M	2 ♦ M	3.19 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 ♦ M	0.133 ♦ M	1.42 ♦ M	<0.018 ♦ M	1.59 ♦ M	1.4 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 ♦ M	0.028 ♦ M	0.288 ♦ M	<0.023 ♦ M	0.291 ♦ M	0.441 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 ♦ M	0.136 ♦ M	1.44 ♦ M	<0.024 ♦ M	1.47 ♦ M	1.72 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.632	1.92	13.8	2.47	21	31

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref. 4E-F10-V
			Depth (m) 2.50 - 2.50
			Sample Type Soil/Solid (S)
			Date Sampled 26/11/2018
			Sample Time 00:00
			Date Received 28/11/2018
			SDG Ref 181128-38
			Lab Sample No.(s) 18833078
			AGS Reference
Naphthalene-d8 % recovery**	%	TM218	93.2
Acenaphthene-d10 % recovery**	%	TM218	90.3
Phenanthrene-d10 % recovery**	%	TM218	83.8
Chrysene-d12 % recovery**	%	TM218	75
Perylene-d12 % recovery**	%	TM218	79
Naphthalene	<0.009 mg/kg	TM218	0.0244 ♦ M
Acenaphthylene	<0.012 mg/kg	TM218	<0.012 ♦ M
Acenaphthene	<0.008 mg/kg	TM218	<0.008 ♦ M
Fluorene	<0.01 mg/kg	TM218	<0.01 ♦ M
Phenanthrene	<0.015 mg/kg	TM218	0.0209 ♦ M
Anthracene	<0.016 mg/kg	TM218	<0.016 ♦ M
Fluoranthene	<0.017 mg/kg	TM218	0.0569 ♦ M
Pyrene	<0.015 mg/kg	TM218	0.0602 ♦ M
Benz(a)anthracene	<0.014 mg/kg	TM218	0.042 ♦ M
Chrysene	<0.01 mg/kg	TM218	0.0457 ♦ M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218	0.0516 ♦ M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218	0.025 ♦ M
Benzo(a)pyrene	<0.015 mg/kg	TM218	0.0523 ♦ M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218	0.0462 ♦ M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218	<0.023 ♦ M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218	0.048 ♦ M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218	0.473

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4E-D10
Depth (m)	1.70 - 1.70
Sample Type	Ground Water (GW)
Date Sampled	26/11/2018
Sample Time	00:00
Date Received	28/11/2018
SDG Ref	181128-38
Lab Sample No.(s)	18833111
AGS Reference	

Component	LOD/Units	Method	
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<100 #
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<100 #
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<100 #
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<100 #
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<100 #
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<100 #
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<100 #
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<100 #
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<100 #
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<100 #
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<100 #
2-Chlorophenol (aq)	<1 µg/l	TM176	<100 #
2-Methylnaphthalene (aq)	<1 µg/l	TM176	2260 #
2-Methylphenol (aq)	<1 µg/l	TM176	<100 #
2-Nitroaniline (aq)	<1 µg/l	TM176	<100 #
2-Nitrophenol (aq)	<1 µg/l	TM176	<100 #
3-Nitroaniline (aq)	<1 µg/l	TM176	<100 #
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<100 #
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<100 #
4-Chloroaniline (aq)	<1 µg/l	TM176	<100
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<100 #
4-Methylphenol (aq)	<1 µg/l	TM176	<100 #
4-Nitroaniline (aq)	<1 µg/l	TM176	<100 #
4-Nitrophenol (aq)	<1 µg/l	TM176	<100
Azobenzene (aq)	<1 µg/l	TM176	<100 #
Acenaphthylene (aq)	<1 µg/l	TM176	<100 #
Acenaphthene (aq)	<1 µg/l	TM176	245 #
Anthracene (aq)	<1 µg/l	TM176	<100 #
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<100 #
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<100 #
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<200 #
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<100 #
Benzo(a)anthracene (aq)	<1 µg/l	TM176	170 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4E-D10
Depth (m)	1.70 - 1.70
Sample Type	Ground Water (GW)
Date Sampled	26/11/2018
Sample Time	00:00
Date Received	28/11/2018
SDG Ref	181128-38
Lab Sample No.(s)	18833111
AGS Reference	

Component	LOD/Units	Method	
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	158 #
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	147 #
Benzo(a)pyrene (aq)	<1 µg/l	TM176	137 #
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<100 #
Carbazole (aq)	<1 µg/l	TM176	<100 #
Chrysene (aq)	<1 µg/l	TM176	199 #
Dibenzofuran (aq)	<1 µg/l	TM176	227 #
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<100 #
Diethyl phthalate (aq)	<1 µg/l	TM176	<100 #
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<100 #
Dimethyl phthalate (aq)	<1 µg/l	TM176	<100 #
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<500 #
Fluoranthene (aq)	<1 µg/l	TM176	<100 #
Fluorene (aq)	<1 µg/l	TM176	257 #
Hexachlorobenzene (aq)	<1 µg/l	TM176	<100 #
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<100 #
Pentachlorophenol (aq)	<1 µg/l	TM176	<100
Phenol (aq)	<1 µg/l	TM176	<100
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<100 #
Hexachloroethane (aq)	<1 µg/l	TM176	<100 #
Nitrobenzene (aq)	<1 µg/l	TM176	<100 #
Naphthalene (aq)	<1 µg/l	TM176	5300 #
Isophorone (aq)	<1 µg/l	TM176	<100 #
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<100
Phenanthrene (aq)	<1 µg/l	TM176	<100 #
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<100 #
Pyrene (aq)	<1 µg/l	TM176	<100 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833052	18833057	18833063	18833070	18833100	18833106
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		75 ♦	95.1 ♦	92.9 ♦	102 ♦	92 ♦	93.7 ♦
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.245 ♦ M	<0.2 ♦ M	<0.2 ♦ M	<0.2 ♦ M	0.43 ♦ M	0.962 ♦ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0463 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	0.051 ♦	0.0582 ♦
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0516 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	0.0632 ♦	0.0538 ♦
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0613 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	0.142 ♦	0.483 ♦
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.69	15	59.4	<0.1	13.9	13.7
Aliphatics >C16-C21	<0.1 mg/kg	TM173		31.7	24.5	175	0.947	36.9	52.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		200	355	582	13.8	74.8	151
Aliphatics >C35-C44	<0.1 mg/kg	TM173		56.7	212	138	1.03	25.8	96.7
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		294	606	954	15.7	151	314
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0344 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	0.0418 ♦	0.0358 ♦
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0409 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	0.0949 ♦	0.323 ♦
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.37	3.57	24.9	<0.1	5.27	3.22
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		13.8	31	95.8	1.9	17.9	21.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		76.3	451	302	26.9	59.2	148
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		39.4	481	134	6.41	43.3	185
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		15.6	230	56.2	1.86	20.2	89.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		133	967	557	35.2	126	357
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		427	1570	1510	51	277	672

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D10-V	4E-E10	4E-E10	4E-E10-V	4E-F10	4E-F10
			Depth (m)	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50	2.50 - 2.50	0.40 - 0.40	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833046	18833085	18833091	18833096	18833042	18833074
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		105 ♦	88.2 ♦	102 ♦	103 ♦	88.6 ♦	99.2 ♦
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.453 ♦ M	0.245 ♦ M	1090 ♦ M	34.5 ♦ M	0.891 ♦ M	0.529 ♦ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	0.923 ♦	0.74 ♦	<0.02 ♦	<0.02 ♦
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0581 ♦	0.0294 ♦	0.363 ♦	0.66 ♦	0.0601 ♦	0.0396 ♦
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0969 ♦	0.0272 ♦	2.59 ♦	1.77 ♦	0.0848 ♦	0.0451 ♦
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.128 ♦	0.0958 ♦	651 ♦	17.4 ♦	0.392 ♦	0.235 ♦
Aliphatics >C12-C16	<0.1 mg/kg	TM173		1.24	<0.1	2.85	<0.1	<0.1	1.47
Aliphatics >C16-C21	<0.1 mg/kg	TM173		1.53	1.5	7.05	<0.1	5.01	10.2
Aliphatics >C21-C35	<0.1 mg/kg	TM173		6.38	30.6	36.9	<0.1	32.8	140
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	6.9	9.07	<0.1	10.8	31.2
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		9.15	39	55.8	<0.1	48.6	182
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	0.427 ♦	1.09 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.2 ♦	<0.2 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0641 ♦	<0.02 ♦	1.73 ♦	1.18 ♦	0.0558 ♦	0.0297 ♦
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.0849 ♦	0.0643 ♦	434 ♦	11.6 ♦	0.261 ♦	0.157 ♦
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	0.461	17.3	<0.1	1.54	1.05
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1.37	3.93	20.5	<0.1	17.7	16.8
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		28.4	21.7	91.3	2.19	101	67.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		3.73	13.1	32.3	<0.1	46.1	27.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		0.644	6.01	12.9	<0.1	19	9.49
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		33.5	39.3	161	2.19	167	113
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		43.1	78.5	1310	36.6	216	296

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref. 4E-F10-V				
			Depth (m) 2.50 - 2.50				
			Sample Type Soil/Solid (S)				
			Date Sampled 26/11/2018				
			Sample Time 00:00				
			Date Received 28/11/2018				
			SDG Ref 181128-38				
			Lab Sample No.(s) 18833078				
			AGS Reference				
GRO Surrogate % recovery**	%	TM089	106 ♦				
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089	0.611 ♦ M				
Aliphatics >C5-C6	<0.01 mg/kg	TM089	<0.02 ♦				
Aliphatics >C6-C8	<0.01 mg/kg	TM089	0.0683 ♦				
Aliphatics >C8-C10	<0.01 mg/kg	TM089	0.0898 ♦				
Aliphatics >C10-C12	<0.01 mg/kg	TM089	0.225 ♦				
Aliphatics >C12-C16	<0.1 mg/kg	TM173	<0.1				
Aliphatics >C16-C21	<0.1 mg/kg	TM173	<0.1				
Aliphatics >C21-C35	<0.1 mg/kg	TM173	<0.1				
Aliphatics >C35-C44	<0.1 mg/kg	TM173	<0.1				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173	<0.1				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089	<0.02 ♦				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089	<0.02 ♦				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089	0.059 ♦				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089	0.15 ♦				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173	<0.1				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173	<0.1				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173	<0.1				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173	<0.1				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173	<0.1				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173	<0.1				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173	0.592				

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

TPH CWG (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

		Customer Sample Ref.	4E-D10
		Depth (m)	1.70 - 1.70
		Sample Type	Ground Water (GW)
		Date Sampled	26/11/2018
		Sample Time	00:00
		Date Received	28/11/2018
		SDG Ref	181128-38
		Lab Sample No.(s)	18833111
		AGS Reference	
Component	**LOD/Units**	**Method**	
GRO Surrogate % recovery**	%	TM245	93 ♦
GRO >C5-C12	<50 µg/l	TM245	19600 ♦ #
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3 ♦
Benzene	<7 µg/l	TM245	2710 ♦
Toluene	<4 µg/l	TM245	934 ♦
Ethylbenzene	<5 µg/l	TM245	114 ♦
m,p-Xylene	<8 µg/l	TM245	1160 ♦
o-Xylene	<3 µg/l	TM245	290 ♦
Sum of detected Xylenes	<11 µg/l	TM245	1450 ♦
Sum of detected BTEX	<28 µg/l	TM245	5210 ♦
Aliphatics >C5-C6	<10 µg/l	TM245	133 ♦
Aliphatics >C6-C8	<10 µg/l	TM245	71 ♦
Aliphatics >C8-C10	<10 µg/l	TM245	1130 ♦
Aliphatics >C10-C12	<10 µg/l	TM245	7360 ♦
Aliphatics >C12-C16 (diss.filt)	<10 µg/l	TM174	95
Aliphatics >C16-C21 (diss.filt)	<10 µg/l	TM174	19
Aliphatics >C21-C35 (diss.filt)	<10 µg/l	TM174	<10
Total Aliphatics >C12-C35 (diss.filt)	<10 µg/l	TM174	118
Aromatics >EC5-EC7	<10 µg/l	TM245	2710 ♦
Aromatics >EC7-EC8	<10 µg/l	TM245	934 ♦
Aromatics >EC8-EC10	<10 µg/l	TM245	2320 ♦
Aromatics >EC10-EC12	<10 µg/l	TM245	4900 ♦
Aromatics >EC12-EC16 (diss.filt)	<10 µg/l	TM174	2100
Aromatics >EC16-EC21 (diss.filt)	<10 µg/l	TM174	241
Aromatics >EC21-EC35 (diss.filt)	<10 µg/l	TM174	66
Aromatics >EC16-EC35 (diss.filt)	<10 µg/l	TM174	307
Total Aromatics >EC12-EC35 (diss.filt)	<10 µg/l	TM174	2400
Total Aliphatics & Aromatics >C5-35 (diss.filt)	<10 µg/l	TM174	22100

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10
			Depth (m)	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833052	18833057	18833063	18833070	18833100	18833106
			AGS Reference						
Dibromofluoromethane**	%	TM116		108 ♦	116 ♦	114 ♦	108 ♦	111 ♦	113 ♦
Toluene-d8**	%	TM116		95.6 ♦	90.7 ♦	92.4 ♦	98.8 ♦	95.2 ♦	92.5 ♦
4-Bromofluorobenzene**	%	TM116		85 ♦	82.1 ♦	88.5 ♦	95.3 ♦	90.8 ♦	87.2 ♦
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M
Benzene	<0.009 mg/kg	TM116		<0.09 ♦ M	<0.09 ♦ M	<0.09 ♦ M	<0.09 ♦ M	<0.09 ♦ M	<0.09 ♦ M
Toluene	<0.007 mg/kg	TM116		<0.07 ♦ M	<0.07 ♦ M	<0.07 ♦ M	<0.07 ♦ M	<0.07 ♦ M	<0.07 ♦ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 ♦ M	<0.04 ♦ M	<0.04 ♦ M	<0.04 ♦ M	<0.04 ♦ M	<0.04 ♦ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 ♦ #	<0.1 ♦ #	<0.1 ♦ #	<0.1 ♦ #	<0.1 ♦ #	<0.1 ♦ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M
Naphthalene	<0.013 mg/kg	TM116		0.275 ♦ M	<0.13 ♦ M	<0.13 ♦ M	<0.13 ♦ M	<0.13 ♦ M	<0.13 ♦ M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 ♦	<0.4 ♦	<0.4 ♦	<0.4 ♦	<0.4 ♦	<0.4 ♦

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-D10-V	4E-E10	4E-E10	4E-E10-V	4E-F10	4E-F10
			Depth (m)	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50	2.50 - 2.50	0.40 - 0.40	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018	26/11/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
			SDG Ref	181128-38	181128-38	181128-38	181128-38	181128-38	181128-38
			Lab Sample No.(s)	18833046	18833085	18833091	18833096	18833042	18833074
			AGS Reference						
Dibromofluoromethane**	%	TM116		107 ♦	107 ♦	111 ♦	110 ♦	110 ♦	110 ♦
Toluene-d8**	%	TM116		98.8 ♦	95.7 ♦	96.2 ♦	98.4 ♦	97.2 ♦	97.3 ♦
4-Bromofluorobenzene**	%	TM116		95.4 ♦	87.8 ♦	94.9 ♦	95.8 ♦	95.2 ♦	94.3 ♦
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M
Benzene	<0.009 mg/kg	TM116		<0.09 ♦ M	<0.09 ♦ M	0.171 ♦ M	1.76 ♦ M	<0.09 ♦ M	<0.09 ♦ M
Toluene	<0.007 mg/kg	TM116		<0.07 ♦ M	<0.07 ♦ M	<0.07 ♦ M	0.153 ♦ M	<0.07 ♦ M	<0.07 ♦ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 ♦ M	<0.04 ♦ M	<0.04 ♦ M	0.582 ♦ M	<0.04 ♦ M	<0.04 ♦ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 ♦ #	<0.1 ♦ #	<0.1 ♦ #	0.928 ♦ #	<0.1 ♦ #	<0.1 ♦ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 ♦ M	<0.1 ♦ M	<0.1 ♦ M	0.297 ♦ M	<0.1 ♦ M	<0.1 ♦ M
Naphthalene	<0.013 mg/kg	TM116		0.308 ♦ M	<0.13 ♦ M	0.389 ♦ M	10.6 ♦ M	<0.13 ♦ M	<0.13 ♦ M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 ♦	<0.4 ♦	<0.4 ♦	3.72 ♦	<0.4 ♦	<0.4 ♦

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	4E-F10-V
			Depth (m)	2.50 - 2.50
			Sample Type	Soil/Solid (S)
			Date Sampled	26/11/2018
			Sample Time	00:00
			Date Received	28/11/2018
			SDG Ref	181128-38
			Lab Sample No.(s)	18833078
			AGS Reference	
Dibromofluoromethane**	%	TM116		109 ♦
Toluene-d8**	%	TM116		98 ♦
4-Bromofluorobenzene**	%	TM116		96.5 ♦
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 ♦ M
Benzene	<0.009 mg/kg	TM116		<0.09 ♦ M
Toluene	<0.007 mg/kg	TM116		<0.07 ♦ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 ♦ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 ♦ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 ♦ M
Naphthalene	<0.013 mg/kg	TM116		<0.13 ♦ M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 ♦

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4E-D10
Depth (m)	1.70 - 1.70
Sample Type	Ground Water (GW)
Date Sampled	26/11/2018
Sample Time	00:00
Date Received	28/11/2018
SDG Ref	181128-38
Lab Sample No.(s)	18833111
AGS Reference	

Component	LOD/Units	Method	
Dibromofluoromethane**	%	TM208	0.66
Toluene-d8**	%	TM208	86.5
4-Bromofluorobenzene**	%	TM208	83.6
Dichlorodifluoromethane	<1 µg/l	TM208	<1
Chloromethane	<1 µg/l	TM208	<1 #
Vinyl chloride	<1 µg/l	TM208	<1 #
Bromomethane	<1 µg/l	TM208	<1 #
Chloroethane	<1 µg/l	TM208	<1 #
Trichlorofluoromethane	<1 µg/l	TM208	<1 #
1,1-Dichloroethene	<1 µg/l	TM208	<1 #
Carbon disulphide	<1 µg/l	TM208	1.15 #
Dichloromethane	<3 µg/l	TM208	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1 #
1,1-Dichloroethane	<1 µg/l	TM208	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1 #
2,2-Dichloropropane	<1 µg/l	TM208	<1
Bromochloromethane	<1 µg/l	TM208	<1 #
Chloroform	<1 µg/l	TM208	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208	<1 #
1,1-Dichloropropene	<1 µg/l	TM208	<1 #
Carbontetrachloride	<1 µg/l	TM208	<1 #
1,2-Dichloroethane	<1 µg/l	TM208	<1 #
Benzene	<1 µg/l	TM208	3480 #
Trichloroethene	<1 µg/l	TM208	<1 #
1,2-Dichloropropane	<1 µg/l	TM208	<1 #
Dibromomethane	<1 µg/l	TM208	<1 #
Bromodichloromethane	<1 µg/l	TM208	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1 #
Toluene	<1 µg/l	TM208	1320 #
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208	<1 #
1,3-Dichloropropane	<1 µg/l	TM208	<1 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4E-D10
Depth (m)	1.70 - 1.70
Sample Type	Ground Water (GW)
Date Sampled	26/11/2018
Sample Time	00:00
Date Received	28/11/2018
SDG Ref	181128-38
Lab Sample No.(s)	18833111
AGS Reference	

Component	LOD/Units	Method	
Tetrachloroethene	<1 µg/l	TM208	<1 #
Dibromochloromethane	<1 µg/l	TM208	<1 #
1,2-Dibromoethane	<1 µg/l	TM208	<1 #
Chlorobenzene	<1 µg/l	TM208	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #
Ethylbenzene	<1 µg/l	TM208	110 #
m,p-Xylene	<1 µg/l	TM208	3290 #
o-Xylene	<1 µg/l	TM208	284 #
Styrene	<1 µg/l	TM208	<1 #
Bromoform	<1 µg/l	TM208	<1 #
Isopropylbenzene	<1 µg/l	TM208	8.16 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #
Bromobenzene	<1 µg/l	TM208	<1 #
Propylbenzene	<1 µg/l	TM208	5 #
2-Chlorotoluene	<1 µg/l	TM208	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208	264 #
4-Chlorotoluene	<1 µg/l	TM208	<1 #
tert-Butylbenzene	<1 µg/l	TM208	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208	249 #
sec-Butylbenzene	<1 µg/l	TM208	1.06 #
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #
n-Butylbenzene	<1 µg/l	TM208	<1 ♦ #
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #
Hexachlorobutadiene	<1 µg/l	TM208	<1 ♦ #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #
Naphthalene	<1 µg/l	TM208	29300 3 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Customer Sample Ref.	4E-D10
Depth (m)	1.70 - 1.70
Sample Type	Ground Water (GW)
Date Sampled	26/11/2018
Sample Time	00:00
Date Received	28/11/2018
SDG Ref	181128-38
Lab Sample No.(s)	18833111
AGS Reference	

Component	LOD/Units	Method	
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1
Sum of detected Xylenes	<2 µg/l	TM208	3570

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C10 0.50 - 0.50 SOLID 26/11/2018 00:00:00 28/11/2018 13:49:32 181128-38 18833052 TM048	11/12/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-C10 2.00 - 2.00 SOLID 26/11/2018 00:00:00 29/11/2018 10:31:38 181128-38 18833063 TM048	11/12/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-D10 1.00 - 1.00 SOLID 26/11/2018 00:00:00 29/11/2018 10:25:00 181128-38 18833106 TM048	11/12/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E10 0.40 - 0.40 SOLID 26/11/2018 00:00:00 29/11/2018 10:28:30 181128-38 18833085 TM048	11/12/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-E10 1.50 - 1.50 SOLID 26/11/2018 00:00:00 29/11/2018 10:09:17 181128-38 18833091 TM048	11/12/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-F10 0.40 - 0.40 SOLID 26/11/2018 00:00:00 29/11/2018 10:12:22 181128-38 18833042 TM048	11/12/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 181128-38 **Client Reference:** **Report Number:** 485164
Location: Llanwern **Order Number:** LLA527 **Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	4E-F10 1.00 - 1.00 SOLID 26/11/2018 00:00:00 29/11/2018 10:06:30 181128-38 18833074 TM048	11/12/2018	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833042
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-F10
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000105	<0.00001	0.000105	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0017	<0.0005	0.017	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00157	<0.001	0.0157	<0.01	-	-	-
Copper	0.00247	<0.0003	0.0247	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00222	<0.001	0.0222	<0.01	-	-	-
Vanadium	0.0461	<0.001	0.461	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0194	<0.019	0.194	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000217	<0.00001	0.000217	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000153	<0.000005	0.000153	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000356	<0.000005	0.000356	<0.00005	-	-	-
Fluoranthene by GCMS	0.000438	<0.000005	0.00438	<0.00005	-	-	-
Anthracene by GCMS	0.0000519	<0.000005	0.000519	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000601	<0.000005	0.000601	<0.00005	-	-	-
Fluorene by GCMS	0.0000412	<0.000005	0.000412	<0.00005	-	-	-
Chrysene by GCMS	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Pyrene by GCMS	0.000292	<0.000005	0.00292	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000098	<0.000005	0.00098	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000164	<0.000005	0.00164	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000619	<0.000005	0.000619	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000951	<0.000002	0.000951	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000254	<0.000005	0.000254	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000987	<0.000005	0.000987	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000728	<0.000005	0.000728	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00168	<0.000082	0.0168	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	9.27
Conductivity (µS/cm)	87.10
Temperature (°C)	18.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

13/12/2018 16:44:14

16:43:45 13/12/2018

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.2
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833042
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-F10
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	9.27
Conductivity (µS/cm)	87.10
Temperature (°C)	18.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

13/12/2018 16:44:14

16:43:45 13/12/2018

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833052
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-C10
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000276	<0.00001	0.000276	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00236	<0.0005	0.0236	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00133	<0.001	0.0133	<0.01	-	-	-
Copper	0.00311	<0.0003	0.0311	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00227	<0.001	0.0227	<0.01	-	-	-
Vanadium	0.124	<0.001	1.24	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000357	<0.00001	0.000357	<0.0001	-	-	-
Acenaphthene by GCMS	0.000067	<0.000005	0.00067	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000309	<0.000005	0.000309	<0.00005	-	-	-
Anthracene by GCMS	0.00000869	<0.000005	0.0000869	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Fluorene by GCMS	0.0000107	<0.000005	0.000107	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000351	<0.000005	0.000351	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0002	<0.000082	0.002	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Nov-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	230.00
Temperature (°C)	17.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

13/12/2018 16:44:14

16:43:45 13/12/2018

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833052
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-C10
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Nov-2018
pH (pH Units)	10.56
Conductivity (µS/cm)	230.00
Temperature (°C)	17.80
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833057
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-C10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00147	<0.0005	0.0147	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00045	<0.0004	0.0045	<0.004	-	-	-
Selenium	0.00492	<0.001	0.0492	<0.01	-	-	-
Vanadium	0.0332	<0.001	0.332	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000736	<0.00001	0.000736	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000796	<0.000005	0.000796	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Anthracene by GCMS	0.0000195	<0.000005	0.000195	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000641	<0.000005	0.000641	<0.00005	-	-	-
Fluorene by GCMS	0.0000356	<0.000005	0.000356	<0.00005	-	-	-
Chrysene by GCMS	0.0000535	<0.000005	0.000535	<0.00005	-	-	-
Pyrene by GCMS	0.0000877	<0.000005	0.000877	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000444	<0.000005	0.000444	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000948	<0.000005	0.000948	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000329	<0.000005	0.000329	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000578	<0.000002	0.000578	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000705	<0.000005	0.000705	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000471	<0.000005	0.000471	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00088	<0.000082	0.0088	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Nov-2018
pH (pH Units)	6.65
Conductivity (µS/cm)	939.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833057
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-C10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Nov-2018
pH (pH Units)	6.65
Conductivity (µS/cm)	939.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.6
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833063
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-C10
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00209	<0.0005	0.0209	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00262	<0.0003	0.0262	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000723	<0.0004	0.00723	<0.004	-	-	-
Selenium	0.00373	<0.001	0.0373	<0.01	-	-	-
Vanadium	0.0599	<0.001	0.599	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.477	<0.019	4.77	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000113	<0.00001	0.00113	<0.0001	-	-	-
Acenaphthene by GCMS	0.000198	<0.000005	0.00198	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000078	<0.000005	0.000078	<0.00005	-	-	-
Fluoranthene by GCMS	0.000125	<0.000005	0.00125	<0.00005	-	-	-
Anthracene by GCMS	0.0000311	<0.000005	0.000311	<0.00005	-	-	-
Phenanthrene by GCMS	0.000179	<0.000005	0.00179	<0.00005	-	-	-
Fluorene by GCMS	0.0000686	<0.000005	0.000686	<0.00005	-	-	-
Chrysene by GCMS	0.0000077	<0.000005	0.000077	<0.00005	-	-	-
Pyrene by GCMS	0.000106	<0.000005	0.00106	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000918	<0.000005	0.0000918	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000693	<0.000005	0.0000693	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000327	<0.000002	0.0000327	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.000855	<0.000082	0.00855	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Dec-2018
pH (pH Units)	10.30
Conductivity (µS/cm)	376.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.6
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833063
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-C10
Depth (m)	2.00 - 2.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Dec-2018
pH (pH Units)	10.30
Conductivity (µS/cm)	376.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

13/12/2018 16:44:14

16:43:45 13/12/2018

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833074
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-F10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.000121	<0.00001	0.00121	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00102	<0.0005	0.0102	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00218	<0.001	0.0218	<0.01	-	-	-
Copper	0.00629	<0.0003	0.0629	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000713	<0.0004	0.00713	<0.004	-	-	-
Selenium	0.00228	<0.001	0.0228	<0.01	-	-	-
Vanadium	0.0832	<0.001	0.832	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000591	<0.00001	0.000591	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000555	<0.000005	0.000555	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000692	<0.000005	0.00692	<0.00005	-	-	-
Anthracene by GCMS	0.000079	<0.000005	0.00079	<0.00005	-	-	-
Phenanthrene by GCMS	0.000271	<0.000005	0.00271	<0.00005	-	-	-
Fluorene by GCMS	0.0000557	<0.000005	0.000557	<0.00005	-	-	-
Chrysene by GCMS	0.0000584	<0.000005	0.000584	<0.00005	-	-	-
Pyrene by GCMS	0.00104	<0.000005	0.0104	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000046	<0.000005	0.00046	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000059	<0.000005	0.000059	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000595	<0.000002	0.0000595	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00238	<0.000082	0.0238	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	11.00
Conductivity (µS/cm)	500.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833074
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-F10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	11.00
Conductivity (µS/cm)	500.00
Temperature (°C)	18.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833085
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-E10
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00222	<0.0005	0.0222	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00115	<0.001	0.0115	<0.01	-	-	-
Copper	0.00104	<0.0003	0.0104	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000482	<0.0004	0.00482	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0578	<0.001	0.578	<0.01	-	-	-
Zinc	0.00613	<0.001	0.0613	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000012	<0.000005	0.00012	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000962	<0.000005	0.0000962	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	10.16
Conductivity (µS/cm)	122.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833085
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-E10
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	10.16
Conductivity (µS/cm)	122.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833091
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-E10
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000211	<0.00001	0.000211	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00351	<0.0005	0.0351	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00121	<0.001	0.0121	<0.01	-	-	-
Copper	0.00445	<0.0003	0.0445	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00235	<0.0004	0.0235	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0125	<0.001	0.125	<0.01	-	-	-
Zinc	0.00222	<0.001	0.0222	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0155	<0.00001	0.155	<0.0001	-	-	-
Acenaphthene by GCMS	0.000469	<0.000005	0.00469	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000172	<0.000005	0.00172	<0.00005	-	-	-
Fluoranthene by GCMS	0.00125	<0.000005	0.0125	<0.00005	-	-	-
Anthracene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Phenanthrene by GCMS	0.00203	<0.000005	0.0203	<0.00005	-	-	-
Fluorene by GCMS	0.000192	<0.000005	0.00192	<0.00005	-	-	-
Chrysene by GCMS	0.000131	<0.000005	0.00131	<0.00005	-	-	-
Pyrene by GCMS	0.000948	<0.000005	0.00948	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000942	<0.000005	0.000942	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000426	<0.000005	0.000426	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000186	<0.000005	0.000186	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000182	<0.000002	0.000182	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000025	<0.000005	0.00025	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.021	<0.000082	0.21	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	30.5	<0.05	305	<0.5	-	-	-
Aliphatics C5-C6	0.033	<0.01	0.33	<0.1	-	-	-
Aliphatics >C6-C8	0.023	<0.01	0.23	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	2.72
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833091
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-E10
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	0.077	<0.01	0.77	<0.1	-	-	-
Aliphatics >C10-C12	18.2	<0.01	182	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.018	<0.01	0.18	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.076	<0.01	0.76	<0.1	-	-	-
Aromatics >EC10-EC12	12.1	<0.01	121	<0.1	-	-	-
Aromatics >EC12-EC16	0.228	<0.01	2.28	<0.1	-	-	-
Aromatics >EC16-EC21	0.019	<0.01	0.19	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.247	<0.01	2.47	<0.1	-	-	-
Benzene by GC	0.018	<0.007	0.18	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	30.8	<0.01	308	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.018	<0.008	0.18	<0.08	-	-	-
o Xylene by GC	0.005	<0.003	0.05	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.023	<0.011	0.23	<0.11	-	-	-
Sum of BTEX by GC	0.041	<0.028	0.41	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Nov-2018
pH (pH Units)	11.86
Conductivity (µS/cm)	2.72
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.092	**Natural Moisture Content (%)**	1.94
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	98.1
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833100
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-D10
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	0.0000201	<0.00001	0.000201	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000534	<0.0005	0.00534	<0.005	-	-	-
Cadmium	0.0000885	<0.00008	0.000885	<0.0008	-	-	-
Chromium	0.00248	<0.001	0.0248	<0.01	-	-	-
Copper	0.00184	<0.0003	0.0184	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00371	<0.003	0.0371	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00138	<0.001	0.0138	<0.01	-	-	-
Vanadium	0.0723	<0.001	0.723	<0.01	-	-	-
Zinc	0.038	<0.001	0.38	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.533	<0.019	5.33	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000506	<0.00001	0.00506	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000614	<0.000005	0.000614	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000136	<0.000005	0.000136	<0.00005	-	-	-
Fluoranthene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Anthracene by GCMS	0.0000668	<0.000005	0.000668	<0.00005	-	-	-
Phenanthrene by GCMS	0.000241	<0.000005	0.00241	<0.00005	-	-	-
Fluorene by GCMS	0.0000285	<0.000005	0.000285	<0.00005	-	-	-
Chrysene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Pyrene by GCMS	0.000123	<0.000005	0.00123	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000732	<0.000005	0.0000732	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000937	<0.000005	0.0000937	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000529	<0.000005	0.0000529	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0012	<0.000082	0.012	<0.00082	-	-	-

Leach Test Information

Date Prepared	07-Dec-2018
pH (pH Units)	11.05
Conductivity (µS/cm)	472.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.898

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833106
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-D10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000731	<0.0005	0.00731	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000437	<0.0003	0.00437	<0.003	-	-	-
Lead	0.00119	<0.0002	0.0119	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00481	<0.001	0.0481	<0.01	-	-	-
Vanadium	0.0434	<0.001	0.434	<0.01	-	-	-
Zinc	0.00138	<0.001	0.0138	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000103	<0.00001	0.00103	<0.0001	-	-	-
Acenaphthene by GCMS	0.000238	<0.000005	0.00238	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000151	<0.000005	0.00151	<0.00005	-	-	-
Anthracene by GCMS	0.0000451	<0.000005	0.000451	<0.00005	-	-	-
Phenanthrene by GCMS	0.000203	<0.000005	0.00203	<0.00005	-	-	-
Fluorene by GCMS	0.0000667	<0.000005	0.000667	<0.00005	-	-	-
Chrysene by GCMS	0.0000167	<0.000005	0.000167	<0.00005	-	-	-
Pyrene by GCMS	0.000238	<0.000005	0.00238	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000186	<0.000005	0.000186	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000728	<0.000005	0.0000728	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000285	<0.000002	0.0000285	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00109	<0.000082	0.0109	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Dec-2018
pH (pH Units)	10.64
Conductivity (µS/cm)	251.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	181128-38
Lab Sample Number(s)	18833106
Sampled Date	26-Nov-2018
Customer Sample Ref.	4E-D10
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	07-Dec-2018
pH (pH Units)	10.64
Conductivity (µS/cm)	251.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	18833052	18833057	18833063	18833070	18833100	18833106	18833111	18833046	18833085	18833091
Customer Sample Ref.	4E-C10	4E-C10	4E-C10	4E-C10-V	4E-D10	4E-D10	4E-D10	4E-D10-V	4E-E10	4E-E10
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	2.00 - 2.00	2.50 - 2.50	0.50 - 0.50	1.00 - 1.00	1.70 - 1.70	2.80 - 2.80	0.40 - 0.40	1.50 - 1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Ground Water	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	10-Dec-2018		10-Dec-2018			10-Dec-2018			10-Dec-2018	10-Dec-2018
Ammoniacal Nitrogen	07-Dec-2018	06-Dec-2018	11-Dec-2018		11-Dec-2018	11-Dec-2018	07-Dec-2018		07-Dec-2018	07-Dec-2018
Ammonium Soil by Titration	11-Dec-2018	11-Dec-2018	07-Dec-2018	07-Dec-2018	11-Dec-2018	11-Dec-2018		11-Dec-2018	07-Dec-2018	11-Dec-2018
Anions by Kone (soil)	12-Dec-2018		12-Dec-2018			12-Dec-2018			05-Dec-2018	12-Dec-2018
Asbestos ID in Solid Samples	11-Dec-2018		11-Dec-2018			11-Dec-2018			11-Dec-2018	11-Dec-2018
CEN 10:1 Leachate (1 Stage)	30-Nov-2018	30-Nov-2018	07-Dec-2018		07-Dec-2018	07-Dec-2018			29-Nov-2018	29-Nov-2018
CEN Readings	01-Dec-2018	01-Dec-2018	11-Dec-2018		11-Dec-2018	11-Dec-2018			01-Dec-2018	01-Dec-2018
Cyanide Comp/Free/Total/Thiocyanate	13-Dec-2018	13-Dec-2018	13-Dec-2018	13-Dec-2018	13-Dec-2018	13-Dec-2018	06-Dec-2018	13-Dec-2018	13-Dec-2018	13-Dec-2018
Dissolved Metals by ICP-MS	12-Dec-2018	13-Dec-2018	12-Dec-2018		12-Dec-2018	11-Dec-2018			12-Dec-2018	12-Dec-2018
EPH CWG (Aliphatic) Aqueous GC (W)	12-Dec-2018	11-Dec-2018	12-Dec-2018			12-Dec-2018			11-Dec-2018	12-Dec-2018
EPH CWG (Aliphatic) Filtered GC (W)							04-Dec-2018			
EPH CWG (Aliphatic) GC (S)	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018		10-Dec-2018	10-Dec-2018	10-Dec-2018
EPH CWG (Aromatic) Aqueous GC (W)	12-Dec-2018	11-Dec-2018	12-Dec-2018			12-Dec-2018			11-Dec-2018	12-Dec-2018
EPH CWG (Aromatic) Filtered GC (W)							04-Dec-2018			
EPH CWG (Aromatic) GC (S)	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018		10-Dec-2018	10-Dec-2018	10-Dec-2018
GRO by GC-FID (S)	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018		12-Dec-2018	12-Dec-2018	12-Dec-2018
GRO by GC-FID (W)	07-Dec-2018	07-Dec-2018	12-Dec-2018			12-Dec-2018	13-Dec-2018		07-Dec-2018	07-Dec-2018
Low Level Cyanide (W)							04-Dec-2018			
Mercury Dissolved	12-Dec-2018	10-Dec-2018	12-Dec-2018		12-Dec-2018	12-Dec-2018			12-Dec-2018	12-Dec-2018
Metals in solid samples by OES	04-Dec-2018	12-Dec-2018	04-Dec-2018	11-Dec-2018	12-Dec-2018	04-Dec-2018		12-Dec-2018	04-Dec-2018	04-Dec-2018
PAH by GCMS	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018		12-Dec-2018	12-Dec-2018	12-Dec-2018
PAH in waters by GC-MS (diss.filt)							07-Dec-2018			
PAH Spec MS - Aqueous (W)	12-Dec-2018	11-Dec-2018	12-Dec-2018		12-Dec-2018	12-Dec-2018			11-Dec-2018	11-Dec-2018
pH	12-Dec-2018	11-Dec-2018	12-Dec-2018	11-Dec-2018	11-Dec-2018	12-Dec-2018		11-Dec-2018	12-Dec-2018	12-Dec-2018
pH Value	07-Dec-2018	06-Dec-2018	10-Dec-2018		10-Dec-2018	10-Dec-2018			07-Dec-2018	07-Dec-2018
Phenols by HPLC (S)	11-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018		12-Dec-2018	12-Dec-2018	12-Dec-2018
Phenols by HPLC (W)							12-Dec-2018			
Sample description	28-Nov-2018	28-Nov-2018	28-Nov-2018	28-Nov-2018	29-Nov-2018	28-Nov-2018		28-Nov-2018	28-Nov-2018	28-Nov-2018
SVOC MS (W) - Aqueous							07-Dec-2018			
Total Organic Carbon	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018		12-Dec-2018	12-Dec-2018	12-Dec-2018
Total Sulphate	11-Dec-2018		11-Dec-2018			11-Dec-2018			11-Dec-2018	13-Dec-2018
Total Sulphur	03-Dec-2018		04-Dec-2018			04-Dec-2018			03-Dec-2018	
TPH CWG (W)	12-Dec-2018	11-Dec-2018	12-Dec-2018			12-Dec-2018			11-Dec-2018	12-Dec-2018
TPH CWG Filtered (W)							13-Dec-2018			
TPH CWG GC (S)	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018		12-Dec-2018	12-Dec-2018	12-Dec-2018
VOC MS (S)	11-Dec-2018	11-Dec-2018	11-Dec-2018	11-Dec-2018	11-Dec-2018	11-Dec-2018		11-Dec-2018	11-Dec-2018	11-Dec-2018
VOC MS (W)							12-Dec-2018			

Validated

CERTIFICATE OF ANALYSIS

SDG:	181128-38	**Client Reference:**		**Report Number:**	485164
Location:	Llanwern	**Order Number:**	LLA527	**Superseded Report:**	

Lab Sample No(s)	18833096	18833042	18833074	18833078
Customer Sample Ref.	4E-E10-V	4E-F10	4E-F10	4E-F10-V
AGS Ref.				
Depth	2.50 - 2.50	0.40 - 0.40	1.00 - 1.00	2.50 - 2.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)		11-Dec-2018	10-Dec-2018	
Ammoniacal Nitrogen		07-Dec-2018	07-Dec-2018	
Ammonium Soil by Titration	07-Dec-2018	11-Dec-2018	07-Dec-2018	11-Dec-2018
Anions by Kone (soil)		12-Dec-2018	12-Dec-2018	
Asbestos ID in Solid Samples		11-Dec-2018	11-Dec-2018	
CEN 10:1 Leachate (1 Stage)		29-Nov-2018	29-Nov-2018	
CEN Readings		01-Dec-2018	01-Dec-2018	
Cyanide Comp/Free/Total/Thiocyanate	13-Dec-2018	13-Dec-2018	13-Dec-2018	13-Dec-2018
Dissolved Metals by ICP-MS		12-Dec-2018	12-Dec-2018	
EPH CWG (Aliphatic) Aqueous GC (W)		11-Dec-2018	12-Dec-2018	
EPH CWG (Aliphatic) GC (S)	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018
EPH CWG (Aromatic) Aqueous GC (W)		11-Dec-2018	12-Dec-2018	
EPH CWG (Aromatic) GC (S)	10-Dec-2018	10-Dec-2018	10-Dec-2018	10-Dec-2018
GRO by GC-FID (S)	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018
GRO by GC-FID (W)		07-Dec-2018	12-Dec-2018	
Mercury Dissolved		12-Dec-2018	12-Dec-2018	
Metals in solid samples by OES	12-Dec-2018	04-Dec-2018	04-Dec-2018	11-Dec-2018
PAH by GCMS	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018
PAH Spec MS - Aqueous (W)		11-Dec-2018	11-Dec-2018	
pH	11-Dec-2018	12-Dec-2018	12-Dec-2018	11-Dec-2018
pH Value		07-Dec-2018	07-Dec-2018	
Phenols by HPLC (S)	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018
Sample description	29-Nov-2018	28-Nov-2018	28-Nov-2018	28-Nov-2018
Total Organic Carbon	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018
Total Sulphate		11-Dec-2018	10-Dec-2018	
Total Sulphur		03-Dec-2018	03-Dec-2018	
TPH CWG (W)		11-Dec-2018	12-Dec-2018	
TPH CWG GC (S)	12-Dec-2018	12-Dec-2018	12-Dec-2018	12-Dec-2018
VOC MS (S)	11-Dec-2018	11-Dec-2018	11-Dec-2018	11-Dec-2018

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: John Fitzgerald

CERTIFICATE OF ANALYSIS

Date of report Generation:	14 January 2019
Customer:	H_ATKINS_LDC
Sample Delivery Group (SDG):	181207-13
Your Reference:	
Location:	Llanwern
Report No:	488369

We received 12 samples on Friday December 07, 2018 and 12 of these samples were scheduled for analysis which was completed on Monday January 14, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan
Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18900743	W54-01		0.00 - 0.00	06/12/2018
18900773	W54-02		0.00 - 0.00	06/12/2018
18900785	W54-03		0.00 - 0.00	06/12/2018
18900789	W54-04		0.00 - 0.00	06/12/2018
18900793	W55-01		0.00 - 0.00	06/12/2018
18900799	W55-02		0.00 - 0.00	06/12/2018
18900805	W55-03		0.00 - 0.00	06/12/2018
18900820	W55-04		0.00 - 0.00	06/12/2018
18900833	W56-01		0.00 - 0.00	06/12/2018
18900748	W56-02		0.00 - 0.00	06/12/2018
18900754	W56-03		0.00 - 0.00	06/12/2018
18900763	W56-04		0.00 - 0.00	06/12/2018

Maximum Sample/Coolbox Temperature (°C) :

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

9.4

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																			
			18900743			18900773			18900785			18900789			18900793			18900799			18900805	
			Customer Sample Reference																			
			W54-01			W54-02			W54-03			W54-04			W55-01			W55-02			W55-03	
			AGS Reference																			
			Depth (m)																			
			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00	
			Container																			
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	
			Sample Type																			
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Alkali Metals by iCap-OES (Soil)	All	NDPs: 0 Tests: 6		X						X						X						
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 12		X			X			X			X			X			X			
Anions by Kone (soil)	All	NDPs: 0 Tests: 6		X						X						X						
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 6	X						X						X						X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1																				
CEN Readings	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 24	X	X		X	X		X	X		X	X		X	X		X	X		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 12		X			X			X			X			X			X			
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 12		X			X			X			X			X			X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 12			X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 12	X			X			X			X			X			X			X	

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)			18900743			18900773			18900785			18900789			18900793			18900799			18900805
			Customer Sample Reference			W54-01			W54-02			W54-03			W54-04			W55-01			W55-02			W55-03
			AGS Reference																					
			Depth (m)			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Mercury Dissolved	All	NDPs: 0 Tests: 12		X			X			X			X			X			X			X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 12			X			X			X			X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 12			X			X			X			X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 12		X			X			X			X			X			X			X		
pH	All	NDPs: 0 Tests: 12			X			X			X			X			X			X			X	
pH Value	All	NDPs: 0 Tests: 12		X			X			X			X			X			X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 12			X			X			X			X			X			X			X	
Sample description	All	NDPs: 0 Tests: 12			X			X			X			X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 12			X			X			X			X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 6			X						X						X							
Total Sulphur	All	NDPs: 0 Tests: 6			X						X						X							
TPH CWG (W)	All	NDPs: 0 Tests: 12		X			X			X			X			X			X			X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 12			X			X			X			X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 12				X			X			X			X			X			X			X	

| 18900763 | W56-04 | | 0.00 - 0.00 | 60g VOC (ALE215) | S | | |

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
18900743	W54-01	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900773	W54-02	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900785	W54-03	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900789	W54-04	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900793	W55-01	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900799	W55-02	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900805	W55-03	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900820	W55-04	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900833	W56-01	0.00 - 0.00	Dark Brown	Sandy Loam	Vegetation	Stones
18900748	W56-02	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
18900754	W56-03	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation
18900763	W56-04	0.00 - 0.00	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W54-01	W54-02	W54-03	W54-04	W55-01	W55-02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900743	18900773	18900785	18900789	18900793	18900799
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		19	15	17	14	13	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	0.0118 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	0.0354 ♦ M	<0.01 ♦ M	<0.01 ♦ M	0.0115 ♦ M	<0.01 ♦ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 ♦ M	0.0236 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 ♦ M	0.0708 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M
Sulphur, Total	<0.02 %	TM132		0.313		0.29		0.147	
Sulphate, Total potential	<0.06 %	TM132		0.939		0.87		0.441	
Soil Organic Matter (SOM)	<0.35 %	TM132		34.5 #	93.4 #	43.3 #	16.1 #	66.4 #	40.5 #
pH	1 pH Units	TM133		8.58 M	8.77 M	8.92 M	8.81 M	9.08 M	9.22 M
Cyanide, Total	<1 mg/kg	TM153		<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Cyanide, Free	<1 mg/kg	TM153		<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Arsenic	<0.6 mg/kg	TM181		7.68 M	6.12 M	5.63 M	9.36 M	7.32 M	7.68 M
Cadmium	<0.02 mg/kg	TM181		0.235 M	0.0827 M	0.0684 M	0.264 M	0.156 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		101 M	157 M	207 M	94.6 M	233 M	196 M
Copper	<1.4 mg/kg	TM181		15.3 M	20.1 M	11.9 M	11.8 M	11.7 M	15.1 M
Iron	<1000 mg/kg	TM181		45300 #	63700 #	50900 #	39300 #	45000 #	86500 #
Lead	<0.7 mg/kg	TM181		31.7 M	39.6 M	23.8 M	22.1 M	33.8 M	35.4 M
Manganese	<0.13 mg/kg	TM181		6100 M	8880 M	10000 M	6450 M	6980 M	12000 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		18.9 M	17.2 M	12.6 M	14.7 M	15 M	17.6 M
Selenium	<1 mg/kg	TM181		5.48 #	5.55 #	7.45 #	4.92 #	5.32 #	6.63 #
Vanadium	<0.2 mg/kg	TM181		181 #	185 #	243 #	139 #	117 #	246 #
Zinc	<1.9 mg/kg	TM181		139 M	129 M	111 M	159 M	96.3 M	117 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.157		0.211		0.0586	
Calcium	<21 mg/kg	TM224		82500		98500		81200	
Magnesium	<8 mg/kg	TM224		13500		14200		19800	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0453 M		0.081 M		0.014 M	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W55-03	W55-04	W56-01	W56-02	W56-03	W56-04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900805	18900820	18900833	18900748	18900754	18900763
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		16	18	7.4	8.4	9.2	21
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 ♦ M	<0.01 ♦ M	0.0108 ♦ M	<0.01 ♦ M	<0.01 ♦ M	<0.01 ♦ M
Cresols	<0.01 mg/kg	TM062 (S)		0.0118 ♦ M	<0.01 ♦ M	0.0108 ♦ M	<0.01 ♦ M	<0.01 ♦ M	0.0126 ♦ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	<0.015 ♦ M	0.0252 ♦ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M	<0.035 ♦ M
Sulphur, Total	<0.02 %	TM132		0.283		0.423		0.253	
Sulphate, Total potential	<0.06 %	TM132		0.849		1.27		0.759	
Soil Organic Matter (SOM)	<0.35 %	TM132		29.7 #	35 #	13.4 #	45.9 #	32.8 #	76.7 #
pH	1 pH Units	TM133		8.68 M	8.99 M	8.95 M	8.76 M	9.21 M	8.93 M
Cyanide, Total	<1 mg/kg	TM153		<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Cyanide, Free	<1 mg/kg	TM153		<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M	<1 ♦ M
Arsenic	<0.6 mg/kg	TM181		9.38 M	7.71 M	5.28 M	5.04 M	7.7 M	6.67 M
Cadmium	<0.02 mg/kg	TM181		0.291 M	0.0323 M	<0.02 M	0.166 M	0.224 M	0.141 M
Chromium	<0.9 mg/kg	TM181		197 M	202 M	337 M	160 M	52.3 M	111 M
Copper	<1.4 mg/kg	TM181		16.2 M	14.6 M	13.4 M	11.5 M	13.2 M	17.2 M
Iron	<1000 mg/kg	TM181		83000 #	82600 #	110000 #	76100 #	34600 #	69900 #
Lead	<0.7 mg/kg	TM181		39.4 M	37.4 M	30.9 M	32.9 M	44.3 M	31.3 M
Manganese	<0.13 mg/kg	TM181		9700 M	13800 M	22600 M	14400 M	6490 M	9470 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		24.3 M	15.1 M	10.1 M	12.1 M	13.2 M	15.9 M
Selenium	<1 mg/kg	TM181		6.85 #	7.79 #	10.9 #	7.98 #	4.65 #	6.02 #
Vanadium	<0.2 mg/kg	TM181		285 #	336 #	414 #	191 #	81 #	151 #
Zinc	<1.9 mg/kg	TM181		188 M	137 M	107 M	110 M	116 M	118 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.153		0.537		1.13	
Calcium	<21 mg/kg	TM224		102000		181000		119000	
Magnesium	<8 mg/kg	TM224		15600		19300		13700	
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.0387 M		0.562 M		0.0686 M	
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	
Additional Asbestos Components (Using TM048)		TM304						None #	
Analysts Comments		TM304						N/A	
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W54-01	W54-02	W54-03	W54-04	W55-01	W55-02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900743	18900773	18900785	18900789	18900793	18900799
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97	84.7	98.2	94.1	76.7	92.2
Acenaphthene-d10 % recovery**	%	TM218		94.1	93.8	99.1	94.1	84.4	91.2
Phenanthrene-d10 % recovery**	%	TM218		92.4	81.2	87.5	91.7	84	86.1
Chrysene-d12 % recovery**	%	TM218		87.2	89.7	86.7	88.1	86.9	79.9
Perylene-d12 % recovery**	%	TM218		86.4	90.6	89.1	91.7	83.1	86.4
Naphthalene	<0.009 mg/kg	TM218		0.549 M	38.3 M	3.75 M	1.18 M	6.08 M	3.21 M
Acenaphthylene	<0.012 mg/kg	TM218		0.537 M	51.2 M	6.05 M	1.81 M	5.21 M	2.77 M
Acenaphthene	<0.008 mg/kg	TM218		0.0462 M	16.5 M	0.488 M	0.171 M	0.419 M	0.505 M
Fluorene	<0.01 mg/kg	TM218		0.219 M	135 M	7.71 M	2.19 M	2.48 M	2.32 M
Phenanthrene	<0.015 mg/kg	TM218		2.11 M	379 M	48.3 M	11.5 M	19.1 M	13.9 M
Anthracene	<0.016 mg/kg	TM218		0.876 M	155 M	20.3 M	3.8 M	11.1 M	5.57 M
Fluoranthene	<0.017 mg/kg	TM218		7.02 M	374 M	98 M	17.6 M	54.5 M	24.3 M
Pyrene	<0.015 mg/kg	TM218		4.76 M	302 M	74.5 M	12.6 M	39.5 M	19.2 M
Benz(a)anthracene	<0.014 mg/kg	TM218		3.1 M	206 M	38.5 M	7.94 M	22.2 M	12.2 M
Chrysene	<0.01 mg/kg	TM218		3.1 M	166 M	35.9 M	7.13 M	20.1 M	10.7 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		4.48 M	212 M	47.4 M	9.76 M	34 M	13.7 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		1.77 M	81.5 M	17.1 M	3.39 M	6.48 M	7.54 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		2.76 M	147 M	31.4 M	6.32 M	20 M	10.3 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.81 M	80.5 M	18.1 M	3.67 M	15 M	5.97 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.542 M	24.1 M	5.15 M	1.1 M	3.59 M	1.65 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		2.26 M	88.3 M	21.2 M	4.16 M	12.4 M	6.86 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		35.9	2460	474	94.3	272	141

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W55-03	W55-04	W56-01	W56-02	W56-03	W56-04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900805	18900820	18900833	18900748	18900754	18900763
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		97.2	91.6	95.4	91.4	91.9	72.7
Acenaphthene-d10 % recovery**	%	TM218		95.4	92.1	97.1	90.5	92.8	82.5
Phenanthrene-d10 % recovery**	%	TM218		93.5	88.8	93.2	88.6	86.9	82.9
Chrysene-d12 % recovery**	%	TM218		88	84	85.2	82.1	80.6	78.4
Perylene-d12 % recovery**	%	TM218		95.5	80.9	88.2	82.7	82.8	89.7
Naphthalene	<0.009 mg/kg	TM218		0.983 M	1.06 M	3.08 M	5.22 M	5.31 M	7.93 M
Acenaphthylene	<0.012 mg/kg	TM218		1.73 M	0.643 M	9.89 M	4.94 M	5.08 M	6.2 M
Acenaphthene	<0.008 mg/kg	TM218		0.0954 M	0.0692 M	0.89 M	0.431 M	0.345 M	0.905 M
Fluorene	<0.01 mg/kg	TM218		1.69 M	0.314 M	15.5 M	3.65 M	3.59 M	3.2 M
Phenanthrene	<0.015 mg/kg	TM218		9.64 M	2.34 M	58.3 M	19.9 M	22.6 M	18.9 M
Anthracene	<0.016 mg/kg	TM218		4.94 M	1.01 M	16.6 M	11.1 M	12 M	10.5 M
Fluoranthene	<0.017 mg/kg	TM218		19.6 M	5.99 M	69.3 M	47.4 M	51.6 M	59.4 M
Pyrene	<0.015 mg/kg	TM218		14.7 M	4.51 M	48.1 M	35.4 M	38.2 M	45.7 M
Benz(a)anthracene	<0.014 mg/kg	TM218		9.11 M	3.11 M	24.7 M	20.7 M	23.5 M	24.9 M
Chrysene	<0.01 mg/kg	TM218		8.47 M	3.05 M	22.2 M	18.6 M	21.1 M	24.2 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		12.3 M	4.36 M	29.8 M	27.9 M	31.5 M	34.8 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		5.06 M	1.46 M	10.8 M	9.23 M	12.2 M	12.7 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		8.04 M	2.55 M	18.5 M	17.7 M	19.2 M	23.3 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		4.82 M	1.53 M	10.7 M	10.2 M	11.3 M	18.4 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		1.37 M	0.491 M	3.16 M	2.9 M	3.36 M	3.96 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		5.5 M	1.86 M	12 M	11.9 M	12.9 M	14.2 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		108	34.4	354	247	274	309

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W54-01	W54-02	W54-03	W54-04	W55-01	W55-02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900743	18900773	18900785	18900789	18900793	18900799
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		55.3 ♦	20.3 ♦	44.4 ♦	45.9 ♦	31.7 ♦	29.7 ♦
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 ♦	<0.2 ♦	<0.2 ♦	<0.2 ♦	<0.2 ♦	<0.2 ♦
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 ♦	0.0271 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 ♦	0.026 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 ♦	0.033 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.67	15	3.84	3.35	6.94	5.29
Aliphatics >C16-C21	<0.1 mg/kg	TM173		15	29.1	15.7	8.69	14.2	13.6
Aliphatics >C21-C35	<0.1 mg/kg	TM173		51.1	117	118	23.7	35.3	41.7
Aliphatics >C35-C44	<0.1 mg/kg	TM173		10.4	20.6	54.1	3.87	6.34	11
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		80.2	181	192	39.6	62.8	71.7
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 ♦	0.0224 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦	<0.02 ♦
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		13.3	69.9	21.2	5.88	196	13.5
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		151	411	111	38.5	1150	113
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		335	915	399	123	1530	297
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		89.5	226	160	33.3	339	76.9
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		30.8	75.1	58	10.8	108	24.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		588	1620	692	200	3220	500
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		669	1800	883	240	3280	572

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W55-03	W55-04	W56-01	W56-02	W56-03	W56-04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900805	18900820	18900833	18900748	18900754	18900763
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		31.5 ♦	31.9	74.1	22.9	30.1	26.3 ♦
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 ♦	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 ♦
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.92	11.1	6.27	10.5	10.2	18.2
Aliphatics >C16-C21	<0.1 mg/kg	TM173		13.4	16.7	19.5	17.6	19.9	31.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		32.6	71.4	43.6	54.3	44.4	78.9
Aliphatics >C35-C44	<0.1 mg/kg	TM173		6.91	21.4	10.2	11.3	12.2	15.9
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		56.8	121	79.7	93.7	86.7	144
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 ♦	<0.02	<0.02	<0.02	<0.02	<0.02 ♦
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		8.25	15.3	20.7	33.6	24.5	162
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		75.9	48	163	287	205	1070
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		219	139	309	691	523	1640
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		60.3	43.9	74.8	166	122	376
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		19	15.2	24.8	51.2	38.9	121
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		364	246	567	1180	874	3250
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		421	366	647	1270	961	3390

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W54-01	W54-02	W54-03	W54-04	W55-01	W55-02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900743	18900773	18900785	18900789	18900793	18900799
			AGS Reference						
Dibromofluoromethane**	%	TM116		105 ♦	104 ♦	107 ♦	107 ♦	103 ♦	106 ♦
Toluene-d8**	%	TM116		94.7 ♦	101 ♦	97.1 ♦	93.5 ♦	99.3 ♦	102 ♦
4-Bromofluorobenzene**	%	TM116		75.2 ♦	96.4 ♦	78.6 ♦	71.9 ♦	87.4 ♦	98.8 ♦
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 ♦ M	<2 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.2 ♦ M	<2 ♦ M
Benzene	<0.009 mg/kg	TM116		<0.09 ♦ M	<1.8 ♦ M	<0.09 ♦ M	<0.09 ♦ M	<0.18 ♦ M	<1.8 ♦ M
Toluene	<0.007 mg/kg	TM116		<0.07 ♦ M	<1.4 ♦ M	<0.07 ♦ M	<0.07 ♦ M	<0.14 ♦ M	<1.4 ♦ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 ♦ M	<0.8 ♦ M	<0.04 ♦ M	<0.04 ♦ M	<0.08 ♦ M	<0.8 ♦ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 ♦ #	<2 ♦ #	<0.1 ♦ #	<0.1 ♦ #	<0.2 ♦ #	<2 ♦ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 ♦ M	<2 ♦ M	<0.1 ♦ M	<0.1 ♦ M	<0.2 ♦ M	<2 ♦ M
Naphthalene	<0.013 mg/kg	TM116		0.189 ♦ M	<2.6 ♦ M	0.401 ♦ M	0.193 ♦ M	<0.26 ♦ M	<2.6 ♦ M
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 ♦	<8 ♦	<0.4 ♦	<0.4 ♦	<0.8 ♦	<8 ♦

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	W55-03	W55-04	W56-01	W56-02	W56-03	W56-04
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018	06/12/2018
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018	07/12/2018
			SDG Ref	181207-13	181207-13	181207-13	181207-13	181207-13	181207-13
			Lab Sample No.(s)	18900805	18900820	18900833	18900748	18900754	18900763
			AGS Reference						
Dibromofluoromethane**	%	TM116		102 ♦	116 ♦	101 ♦	116 ♦	117 ♦	107 ♦
Toluene-d8**	%	TM116		100 ♦	103 ♦	95.5 ♦	103 ♦	103 ♦	100 ♦
4-Bromofluorobenzene**	%	TM116		95 ♦	102 ♦	73.9 ♦	102 ♦	102 ♦	98.9 ♦
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<2 ♦ M	<2 ♦ M	<0.2 ♦ M	<2 ♦ M	<2 ♦ M	<2 ♦ M
Benzene	<0.009 mg/kg	TM116		<1.8 ♦ M	<1.8 ♦ M	<0.18 ♦ M	<1.8 ♦ M	<1.8 ♦ M	<1.8 ♦ M
Toluene	<0.007 mg/kg	TM116		<1.4 ♦ M	<1.4 ♦ M	<0.14 ♦ M	<1.4 ♦ M	<1.4 ♦ M	<1.4 ♦ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.8 ♦ M	<0.8 ♦ M	<0.08 ♦ M	<0.8 ♦ M	<0.8 ♦ M	<0.8 ♦ M
p/m-Xylene	<0.01 mg/kg	TM116		<2 ♦ #	<2 ♦ #	<0.2 ♦ #	<2 ♦ #	<2 ♦ #	<2 ♦ #
o-Xylene	<0.01 mg/kg	TM116		<2 ♦ M	<2 ♦ M	<0.2 ♦ M	<2 ♦ M	<2 ♦ M	<2 ♦ M
Naphthalene	<0.013 mg/kg	TM116		<2.6 ♦ M	<2.6 ♦ M	0.441 ♦ M	6.09 ♦ M	6.41 ♦ M	<2.6 ♦ M
Sum of BTEX	<0.04 mg/kg	TM116		<8 ♦	<8 ♦	<0.8 ♦	<8 ♦	<8 ♦	<8 ♦

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W54-01 0.00 - 0.00 SOLID 06/12/2018 00:00:00 07/12/2018 07:44:00 181207-13 18900743 TM048	19/12/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W54-03 0.00 - 0.00 SOLID 06/12/2018 00:00:00 07/12/2018 07:44:00 181207-13 18900785 TM048	19/12/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W55-01 0.00 - 0.00 SOLID 06/12/2018 00:00:00 07/12/2018 07:44:00 181207-13 18900793 TM048	19/12/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W55-03 0.00 - 0.00 SOLID 06/12/2018 00:00:00 07/12/2018 07:44:00 181207-13 18900805 TM048	20/12/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W56-01 0.00 - 0.00 SOLID 06/12/2018 00:00:00 07/12/2018 07:44:00 181207-13 18900833 TM048	20/12/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	W56-03 0.00 - 0.00 SOLID 06/12/2018 00:00:00 07/12/2018 07:44:00 181207-13 18900754 TM048	20/12/2018	Lucy Caroe	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Asbestos Quantification - Full

Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM Evaluation	Asbestos Quantification - Total - %
Cust. Sample Ref.	W56-03	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.00 - 0.00					
Sample Type	SOLID					
Date Sampled	06/12/2018 00:00:00					
Date Receieved	07/12/2018 07:44:00					
SDG	181207-13					
Original Sample	18900754					
Method Number	TM304					

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900743
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00606	<0.0005	0.0606	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00104	<0.001	0.0104	<0.01	-	-	-
Copper	0.00217	<0.0003	0.0217	<0.003	-	-	-
Lead	0.000908	<0.0002	0.00908	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000837	<0.0004	0.00837	<0.004	-	-	-
Selenium	0.00146	<0.001	0.0146	<0.01	-	-	-
Vanadium	0.0451	<0.001	0.451	<0.01	-	-	-
Zinc	0.01	<0.001	0.1	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.291	<0.019	2.91	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000296	<0.00001	0.000296	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000876	<0.000005	0.0000876	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Fluoranthene by GCMS	0.000188	<0.000005	0.00188	<0.00005	-	-	-
Anthracene by GCMS	0.0000336	<0.000005	0.000336	<0.00005	-	-	-
Phenanthrene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Fluorene by GCMS	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Chrysene by GCMS	0.000107	<0.000005	0.00107	<0.00005	-	-	-
Pyrene by GCMS	0.000135	<0.000005	0.00135	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000937	<0.000005	0.000937	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000159	<0.000005	0.00159	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000622	<0.000005	0.000622	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000739	<0.000002	0.000739	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000187	<0.000005	0.000187	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000103	<0.000005	0.00103	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000704	<0.000005	0.000704	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00124	<0.000082	0.0124	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.54
Conductivity (µS/cm)	113.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

14/01/2019 14:04:30

14:03:52 14/01/2019

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.111	**Natural Moisture Content (%)**	23.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	81
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900743
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.54
Conductivity (µS/cm)	113.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.879

Mcerts Certification does not apply to leachates

14/01/2019 14:04:30

14:03:52 14/01/2019

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.6
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900748
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00434	<0.0005	0.0434	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00126	<0.001	0.0126	<0.01	-	-	-
Copper	0.00235	<0.0003	0.0235	<0.003	-	-	-
Lead	0.00182	<0.0002	0.0182	<0.002	-	-	-
Manganese	0.00975	<0.003	0.0975	<0.03	-	-	-
Nickel	0.000757	<0.0004	0.00757	<0.004	-	-	-
Selenium	0.0011	<0.001	0.011	<0.01	-	-	-
Vanadium	0.0426	<0.001	0.426	<0.01	-	-	-
Zinc	0.00275	<0.001	0.0275	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.122	<0.019	1.22	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000136	<0.00001	0.00136	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000243	<0.000005	0.000243	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000928	<0.000005	0.000928	<0.00005	-	-	-
Fluoranthene by GCMS	0.000675	<0.000005	0.00675	<0.00005	-	-	-
Anthracene by GCMS	0.0000992	<0.000005	0.000992	<0.00005	-	-	-
Phenanthrene by GCMS	0.000218	<0.000005	0.00218	<0.00005	-	-	-
Fluorene by GCMS	0.0000555	<0.000005	0.000555	<0.00005	-	-	-
Chrysene by GCMS	0.000285	<0.000005	0.00285	<0.00005	-	-	-
Pyrene by GCMS	0.000501	<0.000005	0.00501	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000276	<0.000005	0.00276	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000423	<0.000005	0.00423	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000156	<0.000005	0.00156	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000246	<0.000002	0.00246	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000491	<0.000005	0.000491	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000241	<0.000005	0.00241	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000184	<0.000005	0.00184	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00366	<0.000082	0.0366	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.19
Conductivity (µS/cm)	82.50
Temperature (°C)	17.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.6
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900748
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.19
Conductivity (µS/cm)	82.50
Temperature (°C)	17.40
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900754
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00448	<0.0005	0.0448	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00138	<0.001	0.0138	<0.01	-	-	-
Copper	0.0024	<0.0003	0.024	<0.003	-	-	-
Lead	0.000754	<0.0002	0.00754	<0.002	-	-	-
Manganese	0.00737	<0.003	0.0737	<0.03	-	-	-
Nickel	0.000823	<0.0004	0.00823	<0.004	-	-	-
Selenium	0.00107	<0.001	0.0107	<0.01	-	-	-
Vanadium	0.0359	<0.001	0.359	<0.01	-	-	-
Zinc	0.002	<0.001	0.02	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.942	<0.019	9.42	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000117	<0.00001	0.00117	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000185	<0.000005	0.000185	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000694	<0.000005	0.000694	<0.00005	-	-	-
Fluoranthene by GCMS	0.000475	<0.000005	0.00475	<0.00005	-	-	-
Anthracene by GCMS	0.0000773	<0.000005	0.000773	<0.00005	-	-	-
Phenanthrene by GCMS	0.000225	<0.000005	0.00225	<0.00005	-	-	-
Fluorene by GCMS	0.000037	<0.000005	0.00037	<0.00005	-	-	-
Chrysene by GCMS	0.000229	<0.000005	0.00229	<0.00005	-	-	-
Pyrene by GCMS	0.000371	<0.000005	0.00371	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000228	<0.000005	0.00228	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000345	<0.000005	0.00345	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000124	<0.000005	0.00124	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000186	<0.000002	0.00186	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000393	<0.000005	0.000393	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000194	<0.000005	0.00194	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000148	<0.000005	0.00148	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00288	<0.000082	0.0288	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.29
Conductivity (µS/cm)	75.60
Temperature (°C)	17.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900754
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.29
Conductivity (µS/cm)	75.60
Temperature (°C)	17.50
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900763
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00422	<0.0005	0.0422	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00147	<0.001	0.0147	<0.01	-	-	-
Copper	0.000881	<0.0003	0.00881	<0.003	-	-	-
Lead	0.00164	<0.0002	0.0164	<0.002	-	-	-
Manganese	0.0133	<0.003	0.133	<0.03	-	-	-
Nickel	0.000795	<0.0004	0.00795	<0.004	-	-	-
Selenium	0.00171	<0.001	0.0171	<0.01	-	-	-
Vanadium	0.0459	<0.001	0.459	<0.01	-	-	-
Zinc	0.00342	<0.001	0.0342	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.145	<0.019	1.45	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000123	<0.00001	0.00123	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000241	<0.000005	0.000241	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000846	<0.000005	0.000846	<0.00005	-	-	-
Fluoranthene by GCMS	0.000681	<0.000005	0.00681	<0.00005	-	-	-
Anthracene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Phenanthrene by GCMS	0.000274	<0.000005	0.00274	<0.00005	-	-	-
Fluorene by GCMS	0.0000472	<0.000005	0.000472	<0.00005	-	-	-
Chrysene by GCMS	0.000323	<0.000005	0.00323	<0.00005	-	-	-
Pyrene by GCMS	0.000511	<0.000005	0.00511	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000325	<0.000005	0.00325	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000476	<0.000005	0.00476	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000172	<0.000005	0.00172	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000257	<0.000002	0.00257	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000527	<0.000005	0.000527	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000262	<0.000005	0.00262	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000198	<0.000005	0.00198	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00391	<0.000082	0.0391	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.21
Conductivity (µS/cm)	83.90
Temperature (°C)	17.20
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900763
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.21
Conductivity (µS/cm)	83.90
Temperature (°C)	17.20
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900773
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00361	<0.0005	0.0361	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00174	<0.001	0.0174	<0.01	-	-	-
Copper	0.00328	<0.0003	0.0328	<0.003	-	-	-
Lead	0.00167	<0.0002	0.0167	<0.002	-	-	-
Manganese	0.015	<0.003	0.15	<0.03	-	-	-
Nickel	0.00101	<0.0004	0.0101	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0613	<0.001	0.613	<0.01	-	-	-
Zinc	0.00208	<0.001	0.0208	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.132	<0.019	1.32	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000545	<0.00001	0.000545	<0.0001	-	-	-
Acenaphthene by GCMS	0.000028	<0.000005	0.00028	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000111	<0.000005	0.00111	<0.00005	-	-	-
Fluoranthene by GCMS	0.000704	<0.000005	0.00704	<0.00005	-	-	-
Anthracene by GCMS	0.000112	<0.000005	0.00112	<0.00005	-	-	-
Phenanthrene by GCMS	0.000303	<0.000005	0.00303	<0.00005	-	-	-
Fluorene by GCMS	0.0000644	<0.000005	0.000644	<0.00005	-	-	-
Chrysene by GCMS	0.000413	<0.000005	0.00413	<0.00005	-	-	-
Pyrene by GCMS	0.000538	<0.000005	0.00538	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000371	<0.000005	0.00371	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000578	<0.000005	0.00578	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000259	<0.000005	0.00259	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000361	<0.000002	0.00361	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000658	<0.000005	0.000658	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000285	<0.000005	0.00285	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000239	<0.000005	0.00239	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00449	<0.000082	0.0449	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.20
Conductivity (µS/cm)	88.10
Temperature (°C)	17.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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14:03:52 14/01/2019

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900773
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.019	<0.01	0.19	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.20
Conductivity (µS/cm)	88.10
Temperature (°C)	17.50
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900785
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00468	<0.0005	0.0468	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00246	<0.001	0.0246	<0.01	-	-	-
Copper	0.00577	<0.0003	0.0577	<0.003	-	-	-
Lead	0.00111	<0.0002	0.0111	<0.002	-	-	-
Manganese	0.0194	<0.003	0.194	<0.03	-	-	-
Nickel	0.00173	<0.0004	0.0173	<0.004	-	-	-
Selenium	0.00126	<0.001	0.0126	<0.01	-	-	-
Vanadium	0.0682	<0.001	0.682	<0.01	-	-	-
Zinc	0.00238	<0.001	0.0238	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.123	<0.019	1.23	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000312	<0.00001	0.00312	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000239	<0.000005	0.000239	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000193	<0.000005	0.00193	<0.00005	-	-	-
Fluoranthene by GCMS	0.00126	<0.000005	0.0126	<0.00005	-	-	-
Anthracene by GCMS	0.000219	<0.000005	0.00219	<0.00005	-	-	-
Phenanthrene by GCMS	0.000575	<0.000005	0.00575	<0.00005	-	-	-
Fluorene by GCMS	0.0000885	<0.000005	0.000885	<0.00005	-	-	-
Chrysene by GCMS	0.000585	<0.000005	0.00585	<0.00005	-	-	-
Pyrene by GCMS	0.00106	<0.000005	0.0106	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000575	<0.000005	0.00575	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00092	<0.000005	0.0092	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000394	<0.000005	0.00394	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000577	<0.000002	0.00577	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000107	<0.000005	0.00107	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000476	<0.000005	0.00476	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000361	<0.000005	0.00361	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00773	<0.000082	0.0773	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.39
Conductivity (µS/cm)	108.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900785
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.012	<0.01	0.12	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.39
Conductivity (µS/cm)	108.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900789
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00869	<0.0005	0.0869	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.0012	<0.001	0.012	<0.01	-	-	-
Copper	0.00217	<0.0003	0.0217	<0.003	-	-	-
Lead	0.00234	<0.0002	0.0234	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000897	<0.0004	0.00897	<0.004	-	-	-
Selenium	0.00235	<0.001	0.0235	<0.01	-	-	-
Vanadium	0.0378	<0.001	0.378	<0.01	-	-	-
Zinc	0.0104	<0.001	0.104	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0339	<0.019	0.339	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000541	<0.00001	0.000541	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000369	<0.000005	0.000369	<0.00005	-	-	-
Fluoranthene by GCMS	0.000439	<0.000005	0.00439	<0.00005	-	-	-
Anthracene by GCMS	0.0000979	<0.000005	0.000979	<0.00005	-	-	-
Phenanthrene by GCMS	0.00028	<0.000005	0.0028	<0.00005	-	-	-
Fluorene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Chrysene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-
Pyrene by GCMS	0.000312	<0.000005	0.00312	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000101	<0.000005	0.00101	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000195	<0.000005	0.00195	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000107	<0.000005	0.00107	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000108	<0.000002	0.00108	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000273	<0.000005	0.000273	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000979	<0.000005	0.000979	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000658	<0.000005	0.000658	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00209	<0.000082	0.0209	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.31
Conductivity (µS/cm)	108.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

14/01/2019 14:04:30

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900789
Sampled Date	06-Dec-2018
Customer Sample Ref.	W54-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.31
Conductivity (µS/cm)	108.00
Temperature (°C)	17.10
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900793
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00505	<0.0005	0.0505	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00121	<0.001	0.0121	<0.01	-	-	-
Copper	0.00109	<0.0003	0.0109	<0.003	-	-	-
Lead	0.000292	<0.0002	0.00292	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000442	<0.0004	0.00442	<0.004	-	-	-
Selenium	0.00172	<0.001	0.0172	<0.01	-	-	-
Vanadium	0.0495	<0.001	0.495	<0.01	-	-	-
Zinc	0.00406	<0.001	0.0406	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0216	<0.019	0.216	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00137	<0.00001	0.0137	<0.0001	-	-	-
Acenaphthene by GCMS	0.000153	<0.000005	0.00153	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00112	<0.000005	0.0112	<0.00005	-	-	-
Fluoranthene by GCMS	0.00704	<0.000005	0.0704	<0.00005	-	-	-
Anthracene by GCMS	0.000795	<0.000005	0.00795	<0.00005	-	-	-
Phenanthrene by GCMS	0.00201	<0.000005	0.0201	<0.00005	-	-	-
Fluorene by GCMS	0.000415	<0.000005	0.00415	<0.00005	-	-	-
Chrysene by GCMS	0.00257	<0.000005	0.0257	<0.00005	-	-	-
Pyrene by GCMS	0.00549	<0.000005	0.0549	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00301	<0.000005	0.0301	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00554	<0.000005	0.0554	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00204	<0.000005	0.0204	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00355	<0.000002	0.0355	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000603	<0.000005	0.00603	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00298	<0.000005	0.0298	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00236	<0.000005	0.0236	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.041	<0.000082	0.41	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.85
Conductivity (µS/cm)	80.60
Temperature (°C)	17.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900793
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.015	<0.01	0.15	<0.1	-	-	-
Aromatics >EC21-EC35	0.041	<0.01	0.41	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.056	<0.01	0.56	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.057	<0.01	0.57	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.85
Conductivity (µS/cm)	80.60
Temperature (°C)	17.40
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900799
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	11.4	<0.2	114	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00419	<0.0005	0.0419	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00204	<0.001	0.0204	<0.01	-	-	-
Copper	0.00327	<0.0003	0.0327	<0.003	-	-	-
Lead	0.00113	<0.0002	0.0113	<0.002	-	-	-
Manganese	0.00828	<0.003	0.0828	<0.03	-	-	-
Nickel	0.000848	<0.0004	0.00848	<0.004	-	-	-
Selenium	0.00104	<0.001	0.0104	<0.01	-	-	-
Vanadium	0.0493	<0.001	0.493	<0.01	-	-	-
Zinc	0.00899	<0.001	0.0899	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.711	<0.019	7.11	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000937	<0.00001	0.000937	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000109	<0.000005	0.000109	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000498	<0.000005	0.000498	<0.00005	-	-	-
Fluoranthene by GCMS	0.000359	<0.000005	0.00359	<0.00005	-	-	-
Anthracene by GCMS	0.00005	<0.000005	0.0005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000159	<0.000005	0.00159	<0.00005	-	-	-
Fluorene by GCMS	0.0000262	<0.000005	0.000262	<0.00005	-	-	-
Chrysene by GCMS	0.000174	<0.000005	0.00174	<0.00005	-	-	-
Pyrene by GCMS	0.000274	<0.000005	0.00274	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000172	<0.000005	0.00172	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000278	<0.000005	0.00278	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000961	<0.000005	0.000961	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000149	<0.000002	0.00149	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000323	<0.000005	0.000323	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000168	<0.000005	0.00168	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00221	<0.000082	0.0221	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.18
Conductivity (µS/cm)	121.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900799
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-02
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.018	<0.01	0.18	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.18
Conductivity (µS/cm)	121.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900805
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00747	<0.0005	0.0747	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00159	<0.001	0.0159	<0.01	-	-	-
Copper	0.00629	<0.0003	0.0629	<0.003	-	-	-
Lead	0.00148	<0.0002	0.0148	<0.002	-	-	-
Manganese	0.0184	<0.003	0.184	<0.03	-	-	-
Nickel	0.00145	<0.0004	0.0145	<0.004	-	-	-
Selenium	0.00147	<0.001	0.0147	<0.01	-	-	-
Vanadium	0.0763	<0.001	0.763	<0.01	-	-	-
Zinc	0.00217	<0.001	0.0217	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.192	<0.019	1.92	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000334	<0.00001	0.000334	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000503	<0.000005	0.0000503	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000234	<0.000005	0.000234	<0.00005	-	-	-
Fluoranthene by GCMS	0.000227	<0.000005	0.00227	<0.00005	-	-	-
Anthracene by GCMS	0.0000344	<0.000005	0.000344	<0.00005	-	-	-
Phenanthrene by GCMS	0.000106	<0.000005	0.00106	<0.00005	-	-	-
Fluorene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-
Chrysene by GCMS	0.000123	<0.000005	0.00123	<0.00005	-	-	-
Pyrene by GCMS	0.000172	<0.000005	0.00172	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000847	<0.000005	0.000847	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000266	<0.000005	0.00266	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000137	<0.000002	0.00137	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000371	<0.000005	0.000371	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00016	<0.000005	0.0016	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00166	<0.000082	0.0166	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.04
Conductivity (µS/cm)	104.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900805
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-03
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	0.013	<0.01	0.13	<0.1	-	-	-
Total Aliphatics >C12-C35	0.013	<0.01	0.13	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.013	<0.01	0.13	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	0.013	<0.01	0.13	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	9.04
Conductivity (µS/cm)	104.00
Temperature (°C)	17.70
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900820
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00558	<0.0005	0.0558	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00146	<0.001	0.0146	<0.01	-	-	-
Copper	0.00357	<0.0003	0.0357	<0.003	-	-	-
Lead	0.0016	<0.0002	0.016	<0.002	-	-	-
Manganese	0.0197	<0.003	0.197	<0.03	-	-	-
Nickel	0.00126	<0.0004	0.0126	<0.004	-	-	-
Selenium	0.00128	<0.001	0.0128	<0.01	-	-	-
Vanadium	0.0925	<0.001	0.925	<0.01	-	-	-
Zinc	0.00316	<0.001	0.0316	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.158	<0.019	1.58	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000662	<0.00001	0.000662	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000881	<0.000005	0.0000881	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000395	<0.000005	0.000395	<0.00005	-	-	-
Fluoranthene by GCMS	0.000404	<0.000005	0.00404	<0.00005	-	-	-
Anthracene by GCMS	0.0000819	<0.000005	0.000819	<0.00005	-	-	-
Phenanthrene by GCMS	0.000268	<0.000005	0.00268	<0.00005	-	-	-
Fluorene by GCMS	0.0000267	<0.000005	0.000267	<0.00005	-	-	-
Chrysene by GCMS	0.000229	<0.000005	0.00229	<0.00005	-	-	-
Pyrene by GCMS	0.000239	<0.000005	0.00239	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000163	<0.000005	0.00163	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000253	<0.000005	0.00253	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000118	<0.000005	0.00118	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000124	<0.000002	0.00124	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000284	<0.000005	0.000284	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000874	<0.000005	0.000874	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.00226	<0.000082	0.0226	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.73
Conductivity (µS/cm)	102.00
Temperature (°C)	17.20
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900820
Sampled Date	06-Dec-2018
Customer Sample Ref.	W55-04
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.014	<0.01	0.14	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.73
Conductivity (µS/cm)	102.00
Temperature (°C)	17.20
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900833
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Ammoniacal Nitrogen as N	<0.2	<0.2	<2	<2	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00456	<0.0005	0.0456	<0.005	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Chromium	0.00114	<0.001	0.0114	<0.01	-	-	-
Copper	0.00223	<0.0003	0.0223	<0.003	-	-	-
Lead	0.000448	<0.0002	0.00448	<0.002	-	-	-
Manganese	0.00379	<0.003	0.0379	<0.03	-	-	-
Nickel	0.000579	<0.0004	0.00579	<0.004	-	-	-
Selenium	0.00136	<0.001	0.0136	<0.01	-	-	-
Vanadium	0.0897	<0.001	0.897	<0.01	-	-	-
Zinc	0.00619	<0.001	0.0619	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.23	<0.019	2.3	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000153	<0.00001	0.00153	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000059	<0.000005	0.00059	<0.00005	-	-	-
Fluoranthene by GCMS	0.000315	<0.000005	0.00315	<0.00005	-	-	-
Anthracene by GCMS	0.0000842	<0.000005	0.000842	<0.00005	-	-	-
Phenanthrene by GCMS	0.000242	<0.000005	0.00242	<0.00005	-	-	-
Fluorene by GCMS	0.0000291	<0.000005	0.000291	<0.00005	-	-	-
Chrysene by GCMS	0.000182	<0.000005	0.00182	<0.00005	-	-	-
Pyrene by GCMS	0.000278	<0.000005	0.00278	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00012	<0.000005	0.0012	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000302	<0.000005	0.00302	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000128	<0.000005	0.00128	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000166	<0.000002	0.00166	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000487	<0.000005	0.000487	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000167	<0.000005	0.00167	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00013	<0.000005	0.0013	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	0.0024	<0.000082	0.024	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.39
Conductivity (µS/cm)	128.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.99
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.6
Particle Size <4mm	>95%		

Case	
SDG	181207-13
Lab Sample Number(s)	18900833
Sampled Date	06-Dec-2018
Customer Sample Ref.	W56-01
Depth (m)	0.00 - 0.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	19-Dec-2018
pH (pH Units)	8.39
Conductivity (µS/cm)	128.00
Temperature (°C)	17.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM224	US EPA Method 6010B	Determination of Alkaline Metals by iCap 6500 Duo ICP-OES
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	181207-13	**Client Reference:**		**Report Number:**	488369
Location:	Llanwern	**Order Number:**	LLA534	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	18900743	18900773	18900785	18900789	18900793	18900799	18900805	18900820	18900833	18900748
Customer Sample Ref.	W54-01	W54-02	W54-03	W54-04	W55-01	W55-02	W55-03	W55-04	W56-01	W56-02
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	13-Dec-2018		13-Dec-2018		13-Dec-2018		13-Dec-2018		17-Dec-2018	
Ammoniacal Nitrogen	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018
Ammonium Soil by Titration	19-Dec-2018	18-Dec-2018	19-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018
Anions by Kone (soil)	18-Dec-2018		18-Dec-2018		19-Dec-2018		19-Dec-2018		18-Dec-2018	
Asbestos ID in Solid Samples	19-Dec-2018		19-Dec-2018		19-Dec-2018		20-Dec-2018		20-Dec-2018	
CEN 10:1 Leachate (1 Stage)	19-Dec-2018	19-Dec-2018	19-Dec-2018	19-Dec-2018	19-Dec-2018	19-Dec-2018	19-Dec-2018	19-Dec-2018	19-Dec-2018	19-Dec-2018
CEN Readings	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	20-Dec-2018
Cyanide Comp/Free/Total/Thiocyanate	22-Dec-2018	31-Dec-2018	22-Dec-2018	14-Jan-2019	22-Dec-2018	14-Jan-2019	22-Dec-2018	22-Dec-2018	14-Jan-2019	22-Dec-2018
Dissolved Metals by ICP-MS	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018
EPH CWG (Aliphatic) Aqueous GC (W)	27-Dec-2018	28-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	28-Dec-2018	27-Dec-2018	27-Dec-2018
EPH CWG (Aliphatic) GC (S)	20-Dec-2018	20-Dec-2018	19-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	19-Dec-2018	20-Dec-2018	20-Dec-2018
EPH CWG (Aromatic) Aqueous GC (W)	27-Dec-2018	28-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	28-Dec-2018	27-Dec-2018	27-Dec-2018
EPH CWG (Aromatic) GC (S)	20-Dec-2018	20-Dec-2018	19-Dec-2018	20-Dec-2018	21-Dec-2018	20-Dec-2018	20-Dec-2018	19-Dec-2018	20-Dec-2018	20-Dec-2018
GRO by GC-FID (S)	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	22-Dec-2018	22-Dec-2018	22-Dec-2018
GRO by GC-FID (W)	28-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	28-Dec-2018	31-Dec-2018	28-Dec-2018	31-Dec-2018	28-Dec-2018	28-Dec-2018
Mercury Dissolved	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018
Metals in solid samples by OES	13-Dec-2018	19-Dec-2018	13-Dec-2018	19-Dec-2018	13-Dec-2018	19-Dec-2018	13-Dec-2018	19-Dec-2018	17-Dec-2018	19-Dec-2018
PAH by GCMS	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018	20-Dec-2018
PAH Spec MS - Aqueous (W)	21-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	21-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	21-Dec-2018
pH	20-Dec-2018	18-Dec-2018	20-Dec-2018	18-Dec-2018	20-Dec-2018	18-Dec-2018	20-Dec-2018	18-Dec-2018	20-Dec-2018	18-Dec-2018
pH Value	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018	21-Dec-2018
Phenols by HPLC (S)	02-Jan-2019	03-Jan-2019	02-Jan-2019	03-Jan-2019	02-Jan-2019	03-Jan-2019	03-Jan-2019	02-Jan-2019	03-Jan-2019	03-Jan-2019
Sample description	07-Dec-2018	07-Dec-2018	07-Dec-2018	07-Dec-2018	07-Dec-2018	07-Dec-2018	07-Dec-2018	07-Dec-2018	07-Dec-2018	07-Dec-2018
Total Organic Carbon	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018	27-Dec-2018
Total Sulphate	17-Dec-2018		17-Dec-2018		17-Dec-2018		17-Dec-2018		17-Dec-2018	
Total Sulphur	13-Dec-2018		13-Dec-2018		13-Dec-2018		13-Dec-2018		14-Dec-2018	
TPH CWG (W)	28-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	28-Dec-2018	31-Dec-2018	28-Dec-2018	31-Dec-2018	28-Dec-2018	28-Dec-2018
TPH CWG GC (S)	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	31-Dec-2018	22-Dec-2018	22-Dec-2018	22-Dec-2018
VOC MS (S)	28-Dec-2018	31-Dec-2018	28-Dec-2018	28-Dec-2018	31-Dec-2018	02-Jan-2019	31-Dec-2018	28-Dec-2018	28-Dec-2018	28-Dec-2018

Lab Sample No(s)	18900754	18900763
Customer Sample Ref.	W56-03	W56-04
AGS Ref.		
Depth	0.00 - 0.00	0.00 - 0.00
Type	Soil/Solid (S)	Soil/Solid (S)
Alkali Metals by iCap-OES (Soil)	19-Dec-2018	
Ammoniacal Nitrogen	21-Dec-2018	21-Dec-2018
Ammonium Soil by Titration	20-Dec-2018	18-Dec-2018
Anions by Kone (soil)	19-Dec-2018	
Asbestos ID in Solid Samples	20-Dec-2018	
Asbestos Quantification - Full	20-Dec-2018	
CEN 10:1 Leachate (1 Stage)	19-Dec-2018	19-Dec-2018
CEN Readings	20-Dec-2018	20-Dec-2018
Cyanide Comp/Free/Total/Thiocyanate	22-Dec-2018	22-Dec-2018
Dissolved Metals by ICP-MS	21-Dec-2018	21-Dec-2018
EPH CWG (Aliphatic) Aqueous GC (W)	27-Dec-2018	27-Dec-2018
EPH CWG (Aliphatic) GC (S)	12-Dec-2018	19-Dec-2018
EPH CWG (Aromatic) Aqueous GC (W)	27-Dec-2018	27-Dec-2018
EPH CWG (Aromatic) GC (S)	12-Dec-2018	20-Dec-2018
GRO by GC-FID (S)	22-Dec-2018	31-Dec-2018
GRO by GC-FID (W)	28-Dec-2018	02-Jan-2019
Mercury Dissolved	21-Dec-2018	21-Dec-2018
Metals in solid samples by OES	19-Dec-2018	19-Dec-2018
PAH by GCMS	20-Dec-2018	20-Dec-2018
PAH Spec MS - Aqueous (W)	21-Dec-2018	21-Dec-2018
pH	20-Dec-2018	18-Dec-2018
pH Value	21-Dec-2018	21-Dec-2018
Phenols by HPLC (S)	02-Jan-2019	04-Jan-2019
Sample description	07-Dec-2018	07-Dec-2018
Total Organic Carbon	28-Dec-2018	27-Dec-2018
Total Sulphate	17-Dec-2018	
Total Sulphur	14-Dec-2018	
TPH CWG (W)	28-Dec-2018	02-Jan-2019
TPH CWG GC (S)	22-Dec-2018	31-Dec-2018
VOC MS (S)	28-Dec-2018	02-Jan-2019

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Holding time exceeded before sample received**
5	**Samples exceeded holding time before presevation was performed**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to sampled on date**
&	**Sample Holding Time exceeded - Late arrival of instructions.**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Hawarden
Deeside
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Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: Scott Bowler

CERTIFICATE OF ANALYSIS

Date of report Generation:	10 September 2019
Customer:	Atkins Global Ltd
Sample Delivery Group (SDG):	190816-122
Your Reference:	
Location:	Llanwern
Report No:	520927

This report has been revised and directly supersedes 520053 in its entirety.

We received 25 samples on Friday August 16, 2019 and 25 of these samples were scheduled for analysis which was completed on Tuesday September 03, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan
Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
20535920	BHCP104		0.50 - 0.50	13/08/2019
20535928	BHCP104		1.00 - 1.00	13/08/2019
20535937	BHCP104		1.50 - 1.50	13/08/2019
20535817	CPB2		0.20 - 0.20	13/08/2019
20535834	CPB2		0.50 - 0.50	13/08/2019
20535843	CPB2		1.20 - 1.20	13/08/2019
20535879	CPB4		2.70 - 2.70	13/08/2019
20535886	CPB4		4.70 - 4.70	13/08/2019
20535896	CPB4		7.70 - 7.70	13/08/2019
20535775	CPB6		2.90 - 2.90	12/08/2019
20535904	CPB10		4.30 - 4.30	13/08/2019
20535912	CPB10		8.30 - 8.30	13/08/2019
20535750	CPB13		1.00 - 1.00	06/08/2019
20535825	CPB13		2.70 - 2.70	06/08/2019
20535851	CPBP102		0.30 - 0.30	13/08/2019
20535862	CPBP102		0.50 - 0.50	13/08/2019
20535869	CPBP102		1.50 - 1.50	13/08/2019
20535944	CPBR5		0.30 - 0.30	08/08/2019
20535950	CPBR5		0.60 - 0.60	08/08/2019
20535762	CPBR5		1.20 - 1.20	08/08/2019
20535782	CPBR8		3.80 - 3.80	13/08/2019
20535791	CPBR8		4.80 - 4.80	13/08/2019
20535798	CPBR8		6.80 - 6.80	13/08/2019
20535805	CPBR8		8.80 - 8.80	13/08/2019
20535767	CPBR13		0.80 - 0.80	06/08/2019

Maximum Sample/Coolbox Temperature (˚C) : **14.4**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)˚C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)˚C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	20535920			20535928			20535937			20535817			20535834			20535843			20535879
			Customer Sample Reference	BHCP104			BHCP104			BHCP104			CPB2			CPB2			CPB2			CPB4
			AGS Reference																			
			Depth (m)	0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			0.20 - 0.20			0.50 - 0.50			1.20 - 1.20			2.70 - 2.70
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 25			X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 25			X			X			X			X			X			X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 17		X			X			X			X			X			X			X
CEN Readings	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 49		X	X		X	X		X	X		X	X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 25			X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 25			X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 25				X			X			X			X			X			X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			X
Mercury Dissolved	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 25			X			X			X			X			X			X		

20535825	CPB13		2.70 - 2.70	1kg TUB	S		x				x	x		x	x	x		x				x	x	
20535750	CPB13		1.00 - 1.00	60g VOC (ALE215)	S																x			
				250g Amber Jar (ALE210)	S			x		x				x				x			x				x
				1kg TUB	S		x				x	x		x	x	x		x				x	x	
20535912	CPB10		8.30 - 8.30	60g VOC (ALE215)	S																x			
				250g Amber Jar (ALE210)	S			x		x				x				x			x				x
				1kg TUB	S		x					x		x	x	x		x				x	x	
20535904	CPB10		4.30 - 4.30	60g VOC (ALE215)	S																x			
				250g Amber Jar (ALE210)	S			x		x				x				x			x				x
				1kg TUB	S		x				x	x		x	x	x		x				x	x	
20535775	CPB6		2.90 - 2.90	60g VOC (ALE215)	S																x			
				250g Amber Jar (ALE210)	S			x		x				x				x			x				x
				1kg TUB	S		x				x	x		x	x	x		x				x	x	
20535896	CPB4		7.70 - 7.70	60g VOC (ALE215)	S																x			
				250g Amber Jar (ALE210)	S			x		x				x				x			x				x
				1kg TUB	S		x				x	x		x	x	x		x				x	x	
20535886	CPB4		4.70 - 4.70	60g VOC (ALE215)	S																x			
				250g Amber Jar (ALE210)	S			x		x				x				x			x				x
				1kg TUB	S		x				x	x		x	x	x		x				x	x	
20535879	CPB4		2.70 - 2.70	60g VOC (ALE215)	S																x			
				250g Amber Jar (ALE210)	S			x		x				x				x			x				x

Validated

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)																			
			20535920			20535928			20535937			20535817			20535834			20535843			20535879	
			Customer Sample Reference																			
			BHCP104			BHCP104			BHCP104			CPB2			CPB2			CPB2			CPB4	
			AGS Reference																			
			Depth (m)																			
			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			0.20 - 0.20			0.50 - 0.50			1.20 - 1.20			2.70 - 2.70	
			Container																			
			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type																			
			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
PAH by GCMS	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 25	X			X			X			X			X			X			X	
pH	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			
pH Value	All	NDPs: 0 Tests: 25	X			X			X			X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			
Phenols by HPLC (W)	All	NDPs: 0 Tests: 25	X			X			X			X			X			X			X	
Sample description	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			
Total Organic Carbon	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			
Total Sulphate	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			
Total Sulphur	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			
TPH CWG (W)	All	NDPs: 0 Tests: 25	X			X			X			X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 25		X			X			X			X			X			X			
VOC MS (S)	All	NDPs: 0 Tests: 25			X			X			X			X			X			X		

20535825	CPB13		2.70 - 2.70	1kg TUB	S		x		x		x					x			
20535750	CPB13		1.00 - 1.00	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x					x			
20535912	CPB10		8.30 - 8.30	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x					x			
20535904	CPB10		4.30 - 4.30	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x					x			
20535775	CPB6		2.90 - 2.90	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x					x			
20535896	CPB4		7.70 - 7.70	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x					x			
20535886	CPB4		4.70 - 4.70	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x					x			
20535879	CPB4		2.70 - 2.70	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		

Validated

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
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UNL - Unspecified Liquid
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G - Gas
OTH - Other

Lab Sample No(s)			20535825		20535851			20535862			20535869			20535944		20535950		20535762		20535782		
Customer Sample Reference			CPB13		CPBP102			CPBP102			CPBP102			CPBR5		CPBR5		CPBR5		CPBR8		
AGS Reference																						
Depth (m)			2.70 - 2.70		0.30 - 0.30			0.50 - 0.50			1.50 - 1.50			0.30 - 0.30		0.60 - 0.60		1.20 - 1.20		3.80 - 3.80		
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	1kg TUB	250g Amber Jar (ALE210)	250g Amber Jar (ALE210)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 25			X			X			X			X		X		X	X			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 25	X			X			X			X			X		X	X		X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 25	X			X			X			X			X		X	X		X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 17			X			X			X			X		X		X				
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1												X								
CEN Readings	All	NDPs: 0 Tests: 25			X			X			X			X		X		X	X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 49	X		X	X		X	X		X	X		X	X	X	X	X	X	X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 25			X			X			X			X		X		X	X			
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 25			X			X			X			X		X		X	X			
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 25	X			X			X			X			X		X	X		X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 25			X			X			X			X		X		X	X			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 25	X			X			X			X			X		X	X		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 25		X			X			X			X		X		X	X				X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 25			X			X			X			X		X		X	X			
Mercury Dissolved	All	NDPs: 0 Tests: 25			X			X			X			X		X		X	X			

20535767	CPBR13		0.80 - 0.80	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S		
				1kg TUB	S	X	
20535805	CPBR8		8.80 - 8.80	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S	X	
20535798	CPBR8		6.80 - 6.80	60g VOC (ALE215)	S		
				250g Amber Jar (ALE210)	S	X	
				1kg TUB	S	X	
20535791	CPBR8		4.80 - 4.80	60g VOC (ALE215)	S	X	
				250g Amber Jar (ALE210)	S		X
				1kg TUB	S		X

Validated

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

Results Legend

X Test

N No Determination Possible

Sample Types -
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Non-regulatory
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			Lab Sample No(s)	20535825		20535851			20535862			20535869			20535944			20535950		20535762		20535782	
			Customer Sample Reference	CPB13		CPBP102			CPBP102			CPBP102			CPBR5			CPBR5		CPBR5		CPBR8	
			AGS Reference																				
			Depth (m)	2.70 - 2.70		0.30 - 0.30			0.50 - 0.50			1.50 - 1.50			0.30 - 0.30			0.60 - 0.60		1.20 - 1.20		3.80 - 3.80	
			Container	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	1kg TUB	250g Amber Jar (ALE210)	250g Amber Jar (ALE210)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 25		X			X			X			X			X		X	X		X	
PAH by GCMS	All	NDPs: 0 Tests: 25		X			X			X			X			X		X	X		X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 25				X			X			X			X		X		X	X			
pH	All	NDPs: 0 Tests: 25		X			X			X			X			X		X	X		X	
pH Value	All	NDPs: 0 Tests: 25				X			X			X			X		X		X	X			
Phenols by HPLC (S)	All	NDPs: 0 Tests: 25		X			X			X			X			X		X	X		X	
Phenols by HPLC (W)	All	NDPs: 0 Tests: 25				X			X			X			X		X		X	X			
Sample description	All	NDPs: 0 Tests: 25		X			X			X			X			X		X	X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 25		X			X			X			X			X		X	X		X	
Total Sulphate	All	NDPs: 0 Tests: 25		X			X			X			X			X		X	X		X	
Total Sulphur	All	NDPs: 0 Tests: 25		X			X			X			X			X		X	X		X	
TPH CWG (W)	All	NDPs: 0 Tests: 25				X			X			X			X		X		X	X			
TPH CWG GC (S)	All	NDPs: 0 Tests: 25		X			X			X			X			X		X	X		X	
VOC MS (S)	All	NDPs: 0 Tests: 25			X			X			X			X		X		X	X			X

20535767	CPBR13		0.80 - 0.80	60g VOC (ALE215)	S	
				250g Amber Jar (ALE210)	S	X
				1kg TUB	S	
20535805	CPBR8		8.80 - 8.80	60g VOC (ALE215)	S	
				250g Amber Jar (ALE210)	S	X
				1kg TUB	S	
20535798	CPBR8		6.80 - 6.80	60g VOC (ALE215)	S	
				250g Amber Jar (ALE210)	S	X
				1kg TUB	S	
20535791	CPBR8		4.80 - 4.80	60g VOC (ALE215)	S	X
				250g Amber Jar (ALE210)	S	X
				1kg TUB	S	

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
20535920	BHCP104	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
20535928	BHCP104	1.00 - 1.00	Grey	Loamy Sand	Stones	None
20535937	BHCP104	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	None
20535817	CPB2	0.20 - 0.20	Black	Loamy Sand	Stones	None
20535834	CPB2	0.50 - 0.50	Black	Loamy Sand	Stones	None
20535843	CPB2	1.20 - 1.20	Dark Brown	Loamy Sand	Stones	None
20535879	CPB4	2.70 - 2.70	Black	Loamy Sand	None	None
20535886	CPB4	4.70 - 4.70	Grey	Silt Loam	None	None
20535896	CPB4	7.70 - 7.70	Black	Loamy Sand	None	None
20535775	CPB6	2.90 - 2.90	Grey	Clay	None	None
20535904	CPB10	4.30 - 4.30	Dark Brown	Silt Loam	Vegetation	None
20535912	CPB10	8.30 - 8.30	Grey	Silt Loam	None	None
20535750	CPB13	1.00 - 1.00	Black	Stone/Soil	Stones	None
20535825	CPB13	2.70 - 2.70	Grey	Clay Loam	None	None
20535851	CPBP102	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	None
20535862	CPBP102	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
20535869	CPBP102	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	None
20535762	CPBR5	1.20 - 1.20	Dark Brown	Stone/Soil	Stones	None
20535944	CPBR5	0.30 - 0.30	Dark Brown	Sand	Stones	None
20535950	CPBR5	0.60 - 0.60	Dark Brown	Loamy Sand	Stones	None
20535782	CPBR8	3.80 - 3.80	Black	Silty Clay Loam	None	None
20535791	CPBR8	4.80 - 4.80	Black	Silty Clay Loam	None	None
20535798	CPBR8	6.80 - 6.80	Black	Silty Clay Loam	Vegetation	None
20535805	CPBR8	8.80 - 8.80	Grey	Sand	Stones	None
20535767	CPBR13	0.80 - 0.80	Dark Brown	Stone/Soil	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BHCP104	BHCP104	BHCP104	CPB2	CPB2	CPB2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2019	13/08/2019	13/08/2019	13/08/2019	13/08/2019	13/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535920	20535928	20535937	20535817	20535834	20535843
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		12	7.2	11	9.2	6.2	8.6
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0114 M	<0.01 M	<0.01 M	0.385 M	0.0213 M	0.416 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	0.253 M	0.0107 M	0.471 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	0.022 M	<0.015 M	0.131 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	0.66 M	<0.035 M	1.02 M
Sulphur, Total	<0.02 %	TM132		0.619	0.407	0.255	0.211	0.328	0.538
Sulphate, Total potential	<0.06 %	TM132		1.86	1.22	0.765	0.633	0.984	1.61
Soil Organic Matter (SOM)	<0.35 %	TM132		2.84 #	1.88 #	2.67 #	13.1 #	38.3 #	34.7 #
pH	1 pH Units	TM133		12.1 M	11.8 M	12 M	12.6 M	12.4 M	12.1 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	2.7 M	3.48 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.59 M	<6 M	6.93 M	5.48 M	4.8 M	5.16 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	1.35 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		200 M	509 M	200 M	376 M	215 M	168 M
Copper	<1.4 mg/kg	TM181		11.4 M	25.5 M	7.65 M	7.27 M	6.61 M	4.69 M
Iron	<1000 mg/kg	TM181		97700 #	132000 #	75000 #	123000 #	84100 #	78200 #
Lead	<0.7 mg/kg	TM181		13.8 M	17.7 M	11.5 M	8.05 M	11.8 M	3.79 M
Manganese	<0.13 mg/kg	TM181		20100 M	25800 M	22700 M	30000 M	15500 M	14300 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<1.4 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		12.1 M	5.79 M	5.27 M	6.04 M	7.66 M	5.63 M
Selenium	<1 mg/kg	TM181		7.75 #	<10 #	9.23 #	9.91 #	5.62 #	4.98 #
Vanadium	<0.2 mg/kg	TM181		281 #	379 #	211 #	305 #	217 #	196 #
Zinc	<1.9 mg/kg	TM181		44.3 M	43.2 M	44.8 M	172 M	77.2 M	364 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.443	0.39	0.552	0.282	0.325	0.424
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.121 M	0.0348 M	0.101 M	0.0267 M	0.0402 M	0.0742 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.121 M	0.0348 M	0.101 M	0.0267 M	0.0402 M	0.0742 M

CERTIFICATE OF ANALYSIS

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Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

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*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB4	CPB4	CPB4	CPB6	CPB10	CPB10
			Depth (m)	2.70 - 2.70	4.70 - 4.70	7.70 - 7.70	2.90 - 2.90	4.30 - 4.30	8.30 - 8.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2019	13/08/2019	13/08/2019	12/08/2019	13/08/2019	13/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535879	20535886	20535896	20535775	20535904	20535912
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		70	9.9	67	24	11	33
Exchangeable Ammonia as N	<12 mg/kg	TM024		88.6 M	20.2 M	87.1 M	522 M	43.8 M	61.3 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		2.27	0.431	2.94	0.102	4.21	0.289
Sulphate, Total potential	<0.06 %	TM132		6.81	1.29	8.82	0.306	12.6	0.867
Soil Organic Matter (SOM)	<0.35 %	TM132		57.9 #	1.5 #	33.8 #	1.24 #	61.5 #	1.35 #
pH	1 pH Units	TM133		6.99 M	8.42 M	7.56 M	8.49 M	7.21 M	8.67 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.89 M	6.42 M	5.46 M	11.9 M	9.12 M	9.19 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		10.2 M	22.3 M	8.25 M	32.9 M	5.76 M	17 M
Copper	<1.4 mg/kg	TM181		12.2 M	10.2 M	10.5 M	13.6 M	16.8 M	7.79 M
Iron	<1000 mg/kg	TM181		11500 #	20800 #	22600 #	33600 #	34200 #	27100 #
Lead	<0.7 mg/kg	TM181		5.96 M	15.6 M	3.06 M	22.7 M	10.2 M	12.3 M
Manganese	<0.13 mg/kg	TM181		400 M	607 M	510 M	1490 M	746 M	723 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		12.9 M	27.7 M	14.7 M	36 M	19.3 M	22.4 M
Selenium	<1 mg/kg	TM181		1.87 #	<1 #	1.57 #	<1 #	1.86 #	<1 #
Vanadium	<0.2 mg/kg	TM181		19.2 #	33.7 #	13.2 #	51.1 #	28.7 #	27.8 #
Zinc	<1.9 mg/kg	TM181		25.4 M	87 M	28.6 M	99.8 M	41.1 M	71.7 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.333	0.0617	0.325	0.0219	0.424	0.0936
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.307 M	0.138 M	0.371 M	0.081 M	0.668 M	0.0706 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.307 M	0.138 M	0.371 M	0.081 M	0.668 M	0.0706 M

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB13	CPB13	CPBP102	CPBP102	CPBP102	CPBR5
			Depth (m)	1.00 - 1.00	2.70 - 2.70	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/08/2019	06/08/2019	13/08/2019	13/08/2019	13/08/2019	08/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535750	20535825	20535851	20535862	20535869	20535944
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	26	5.5	8.8	7.1	3.8
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 #	93.4 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ #	<0.01 @ M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ #	<0.01 @ M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ #	<0.015 @ M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ #	<0.035 @ M	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.394	0.0581	0.502	0.595	0.546	0.289
Sulphate, Total potential	<0.06 %	TM132		1.18	0.174	1.51	1.79	1.64	0.867
Soil Organic Matter (SOM)	<0.35 %	TM132		22.4 #	1.65 #	1.43 #	1.6 #	0.796 #	8.21 #
pH	1 pH Units	TM133		10.7 #	8.02 M	10.9 M	11.7 M	11.8 M	8.42 M
Cyanide, Total	<1 mg/kg	TM153		<1 @ #	<1 @ M	<1 M	<1 M	<1 M	38.6 @ M
Cyanide, Free	<1 mg/kg	TM153		<1 @ #	<1 @ M	<1 M	<1 M	<1 M	<2 @ M
Arsenic	<0.6 mg/kg	TM181		5.07 #	11.7 M	5.84 M	4.82 M	6.05 M	8.6 M
Cadmium	<0.02 mg/kg	TM181		0.409 #	0.358 M	<0.02 M	<0.02 M	<0.02 M	0.421 M
Chromium	<0.9 mg/kg	TM181		119 #	30.1 M	230 M	305 M	294 M	72.8 M
Copper	<1.4 mg/kg	TM181		11.6 #	10.5 M	8.56 M	6.54 M	6.92 M	12.5 M
Iron	<1000 mg/kg	TM181		43600 #	32800 #	120000 #	94600 #	115000 #	42600 #
Lead	<0.7 mg/kg	TM181		34.2 #	24.9 M	<0.7 M	4.99 M	3.03 M	26.6 M
Manganese	<0.13 mg/kg	TM181		12300 #	459 M	17900 M	30400 M	28900 M	7570 M
Mercury	<0.14 mg/kg	TM181		<0.14 #	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		5.94 #	30.9 M	18 M	5.47 M	7.84 M	9.93 M
Selenium	<1 mg/kg	TM181		4.19 #	<1 #	5.45 #	11.7 #	10.3 #	2.67 #
Vanadium	<0.2 mg/kg	TM181		207 #	48.9 #	129 #	234 #	230 #	179 #
Zinc	<1.9 mg/kg	TM181		81 #	104 M	31 M	32.2 M	28.3 M	120 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.542	0.0339	0.494	0.783	0.57	2.97
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.117 #	0.0746 M	0.0493 M	0.155 M	0.0671 M	0.296 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.117 #	0.0746 M	0.0493 M	0.155 M	0.0671 M	0.296 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							N/A
Asbestos Quantification - Total - %	<0.001 %	TM304							<0.001 #

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR5	CPBR5	CPBR8	CPBR8	CPBR8	CPBR8
			Depth (m)	0.60 - 0.60	1.20 - 1.20	3.80 - 3.80	4.80 - 4.80	6.80 - 6.80	8.80 - 8.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/08/2019	08/08/2019	13/08/2019	13/08/2019	13/08/2019	13/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535950	20535762	20535782	20535791	20535798	20535805
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.5	8.2	15	12	12	13
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	291 #	29.2 M	45.3 M	42.5 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		0.0219 M	0.0545 #	<0.01 M	<0.01 M	<0.01 M	0.023 M
Cresols	<0.01 mg/kg	TM062 (S)		0.0219 M	0.109 #	<0.01 M	<0.01 M	<0.01 M	0.0575 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	0.0872 #	<0.015 M	<0.015 M	<0.015 M	0.127 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0437 M	0.251 #	<0.035 M	<0.035 M	<0.035 M	0.207 M
Sulphur, Total	<0.02 %	TM132		0.236	0.577	1.63	1.62	2.78	0.13
Sulphate, Total potential	<0.06 %	TM132		0.708	1.73	4.89	4.86	8.34	0.39
Soil Organic Matter (SOM)	<0.35 %	TM132		6.17 #	4.64 #	28.3 #	12.5 #	37.1 #	<0.35 #
pH	1 pH Units	TM133		8.31 M	8.21 #	7.48 M	7.81 M	6.97 M	8.55 M
Cyanide, Total	<1 mg/kg	TM153		125 @ M	223 @ #	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<5 @ M	<1 @ #	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		7.39 M	7.83 #	7.86 M	11.5 M	3.5 M	4.99 M
Cadmium	<0.02 mg/kg	TM181		0.607 M	0.289 #	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		20.3 M	24.5 #	13.5 M	18.6 M	8.33 M	5.97 M
Copper	<1.4 mg/kg	TM181		16.5 M	14.9 #	12.4 M	11.7 M	9.85 M	3.78 M
Iron	<1000 mg/kg	TM181		39000 #	29500 #	19800 #	19500 #	8220 #	8980 #
Lead	<0.7 mg/kg	TM181		26.1 M	17.8 #	9.92 M	11.9 M	2.56 M	3.35 M
Manganese	<0.13 mg/kg	TM181		2750 M	3990 #	301 M	467 M	141 M	233 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 #	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		12.9 M	16.5 #	15 M	21.4 M	10.5 M	8.27 M
Selenium	<1 mg/kg	TM181		<1 #	1.52 #	<1 #	<1 #	1.97 #	<1 #
Vanadium	<0.2 mg/kg	TM181		36.4 #	51 #	25.9 #	31.9 #	11.2 #	11.8 #
Zinc	<1.9 mg/kg	TM181		134 M	98.6 #	43.5 M	65.1 M	29.2 M	23.8 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.508	2.7	0.13	0.106	0.155	0.0749
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.159 M	0.127 #	0.298 M	0.338 M	0.231 M	0.0347 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.159 M	0.127 #	0.298 M	0.338 M	0.231 M	0.0347 M

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref. CPBR13				
			Depth (m) 0.80 - 0.80				
			Sample Type Soil/Solid (S)				
			Date Sampled 06/08/2019				
			Sample Time 00:00				
			Date Received 16/08/2019				
			SDG Ref 190816-122				
			Lab Sample No.(s) 20535767				
			AGS Reference				
Moisture Content Ratio (% of as received sample)	%	PM024	8.7				
Exchangeable Ammonia as N	<12 mg/kg	TM024	112 #				
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 @ #				
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 @ #				
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 @ #				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 @ #				
Sulphur, Total	<0.02 %	TM132	0.288				
Sulphate, Total potential	<0.06 %	TM132	0.864				
Soil Organic Matter (SOM)	<0.35 %	TM132	5.22 #				
pH	1 pH Units	TM133	10.1 #				
Cyanide, Total	<1 mg/kg	TM153	<1 @ #				
Cyanide, Free	<1 mg/kg	TM153	<1 @ #				
Arsenic	<0.6 mg/kg	TM181	8.56 #				
Cadmium	<0.02 mg/kg	TM181	0.246 #				
Chromium	<0.9 mg/kg	TM181	15.6 #				
Copper	<1.4 mg/kg	TM181	18.1 #				
Iron	<1000 mg/kg	TM181	17300 #				
Lead	<0.7 mg/kg	TM181	19.2 #				
Manganese	<0.13 mg/kg	TM181	797 #				
Mercury	<0.14 mg/kg	TM181	<0.14 #				
Nickel	<0.2 mg/kg	TM181	16 #				
Selenium	<1 mg/kg	TM181	<1 #				
Vanadium	<0.2 mg/kg	TM181	31 #				
Zinc	<1.9 mg/kg	TM181	48 #				
Sulphate, acid soluble (total)	<0.02 %	TM221	0.817				
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.107 #				
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243	0.107 #				

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BHCP104	BHCP104	BHCP104	CPB2	CPB2	CPB2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2019	13/08/2019	13/08/2019	13/08/2019	13/08/2019	13/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535920	20535928	20535937	20535817	20535834	20535843
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78.7	82.3	83.9	86	93.3	89.8
Acenaphthene-d10 % recovery**	%	TM218		80.7	83.2	80.7	86.6	92.3	96.2
Phenanthrene-d10 % recovery**	%	TM218		77.9	87.2	78.3	82.8	94.6	94.1
Chrysene-d12 % recovery**	%	TM218		70.4	91.3	72.5	77.9	76.7	72.9
Perylene-d12 % recovery**	%	TM218		73.3	85.2	76.1	74.4	72.8	73.9
Naphthalene	<0.009 mg/kg	TM218		0.915 M	0.904 M	0.826 M	38 @ M	35.1 M	174 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.12 M	0.0741 M	<0.12 M	10.3 @ M	9.86 M	44.4 M
Acenaphthene	<0.008 mg/kg	TM218		<0.08 M	0.0438 M	<0.08 M	0.98 @ M	0.828 M	3.78 M
Fluorene	<0.01 mg/kg	TM218		<0.1 M	0.0583 M	<0.1 M	12.4 @ M	9.22 M	50.1 M
Phenanthrene	<0.015 mg/kg	TM218		0.755 M	0.952 M	0.801 M	41.2 @ M	44.5 M	152 M
Anthracene	<0.016 mg/kg	TM218		0.206 M	0.211 M	0.23 M	9.34 @ M	10.9 M	37.2 M
Fluoranthene	<0.017 mg/kg	TM218		2.02 M	2.47 M	2.4 M	33.5 @ M	41.8 M	115 M
Pyrene	<0.015 mg/kg	TM218		1.8 M	2.12 M	1.97 M	21 @ M	29.2 M	73.8 M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.09 M	1.58 M	1.28 M	10.3 @ M	13.9 M	36.6 M
Chrysene	<0.01 mg/kg	TM218		1.14 M	1.52 M	1.31 M	9.15 @ M	13.1 M	33.3 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.62 M	2.01 M	1.84 M	12.2 @ M	17.4 M	41.8 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.568 M	0.725 M	0.747 M	4 @ M	5.79 M	14.6 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.09 M	1.48 M	1.21 M	7.27 @ M	10.6 M	25.7 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.95 M	1.49 M	1.06 M	5.6 @ M	8.22 M	19.1 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.23 M	0.199 M	<0.23 M	1.2 @ M	1.88 M	4.75 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.833 M	1.26 M	0.929 M	4.67 @ M	8.12 M	17.6 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		13	17.1	14.6	221	260	843

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB4	CPB4	CPB4	CPB6	CPB10	CPB10
			Depth (m)	2.70 - 2.70	4.70 - 4.70	7.70 - 7.70	2.90 - 2.90	4.30 - 4.30	8.30 - 8.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2019	13/08/2019	13/08/2019	12/08/2019	13/08/2019	13/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535879	20535886	20535896	20535775	20535904	20535912
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		88.1	90.9	87.5	98	89.5	95.5
Acenaphthene-d10 % recovery**	%	TM218		88.7	90.1	87.1	96.6	87.9	93
Phenanthrene-d10 % recovery**	%	TM218		88.6	89.6	89.1	97.5	89.2	95.5
Chrysene-d12 % recovery**	%	TM218		85.9	79.4	79.1	93.4	81.3	90.6
Perylene-d12 % recovery**	%	TM218		78.5	81.3	71	84.8	79.8	82.7
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	<0.045 M	0.318 M	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.06 M	0.179 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.04 M	0.0319 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.05 M	0.159 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	<0.075 M	0.729 M	0.0518 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	<0.08 M	0.242 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	<0.017 M	<0.085 M	1.24 M	0.107 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	<0.075 M	0.84 M	0.082 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	<0.07 M	0.451 M	0.0698 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.05 M	0.423 M	0.0641 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	<0.075 M	0.656 M	0.0909 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	<0.07 M	0.216 M	0.0346 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	<0.075 M	0.364 M	0.052 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	<0.09 M	0.315 M	0.0456 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.115 M	0.0766 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	<0.12 M	0.315 M	0.0403 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	<0.118	<0.59	6.55	0.638	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB13	CPB13	CPBP102	CPBP102	CPBP102	CPBR5
			Depth (m)	1.00 - 1.00	2.70 - 2.70	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/08/2019	06/08/2019	13/08/2019	13/08/2019	13/08/2019	08/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535750	20535825	20535851	20535862	20535869	20535944
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		78	85.3	87.9	86.7	94	84.1
Acenaphthene-d10 % recovery**	%	TM218		78.9	83.8	87.2	86.7	92.7	85.1
Phenanthrene-d10 % recovery**	%	TM218		75.7	79.7	87	87.7	96.2	80.2
Chrysene-d12 % recovery**	%	TM218		66.2	72.1	87.2	90.8	98.8	81.4
Perylene-d12 % recovery**	%	TM218		59.1	72.1	76.9	89.5	90.3	74.7
Naphthalene	<0.009 mg/kg	TM218		0.56 @ #	<0.009 @ M	0.047 M	0.266 M	0.237 M	0.775 @ M
Acenaphthylene	<0.012 mg/kg	TM218		0.15 @ #	<0.012 @ M	0.0129 M	<0.012 M	<0.012 M	1.38 @ M
Acenaphthene	<0.008 mg/kg	TM218		0.0358 @ #	<0.008 @ M	0.037 M	0.242 M	0.0306 M	<0.08 @ M
Fluorene	<0.01 mg/kg	TM218		0.149 @ #	<0.01 @ M	0.0233 M	0.0989 M	0.0149 M	0.222 @ M
Phenanthrene	<0.015 mg/kg	TM218		1.42 @ #	<0.015 @ M	0.287 M	1.33 M	0.264 M	2.06 @ M
Anthracene	<0.016 mg/kg	TM218		0.326 @ #	<0.016 @ M	0.0619 M	0.355 M	0.0562 M	0.82 @ M
Fluoranthene	<0.017 mg/kg	TM218		2.29 @ #	<0.017 @ M	0.567 M	2.81 M	0.732 M	11.6 @ M
Pyrene	<0.015 mg/kg	TM218		1.66 @ #	<0.015 @ M	0.532 M	2.65 M	0.749 M	9.44 @ M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.29 @ #	<0.014 @ M	0.379 M	2 M	0.573 M	7.41 @ M
Chrysene	<0.01 mg/kg	TM218		1.39 @ #	<0.01 @ M	0.414 M	1.73 M	0.592 M	7.48 @ M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.98 @ #	<0.015 @ M	0.665 M	2.67 M	0.767 M	12.3 @ M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.578 @ #	<0.014 @ M	0.223 M	0.711 M	0.274 M	4.15 @ M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.964 @ #	<0.015 @ M	0.414 M	2.26 M	0.647 M	6.96 @ M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.85 @ #	<0.018 @ M	0.425 M	1.87 M	0.547 M	7.17 @ M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.138 @ #	<0.023 @ M	0.0584 M	0.295 M	0.102 M	1.01 @ M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.738 @ #	<0.024 @ M	0.369 M	1.56 M	0.524 M	6.1 @ M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		14.1	<0.118	4.51	20.8	6.11	75.1

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR5	CPBR5	CPBR8	CPBR8	CPBR8	CPBR8
			Depth (m)	0.60 - 0.60	1.20 - 1.20	3.80 - 3.80	4.80 - 4.80	6.80 - 6.80	8.80 - 8.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/08/2019	08/08/2019	13/08/2019	13/08/2019	13/08/2019	13/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535950	20535762	20535782	20535791	20535798	20535805
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.9	75.3	93.9	94.7	96	85.6
Acenaphthene-d10 % recovery**	%	TM218		89.8	72.9	86.4	94.5	94.3	86.9
Phenanthrene-d10 % recovery**	%	TM218		91.6	70.4	96.3	96.5	96	84.8
Chrysene-d12 % recovery**	%	TM218		95.8	72.6	94.4	95.1	87.6	75.8
Perylene-d12 % recovery**	%	TM218		89.1	70.1	85	85.2	76.9	70.3
Naphthalene	<0.009 mg/kg	TM218		1.6 M	3.04 @ #	<0.009 M	<0.009 M	0.154 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		1.01 M	0.285 @ #	0.0411 M	<0.012 M	<0.06 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.04 M	<0.08 @ #	0.0288 M	<0.008 M	<0.04 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.185 M	0.591 @ #	0.045 M	<0.01 M	<0.05 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		2.01 M	3.39 @ #	0.141 M	0.0199 M	<0.075 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		0.7 M	1.67 @ #	0.111 M	<0.016 M	<0.08 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		11.6 M	6.2 @ #	0.257 M	0.0524 M	<0.085 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		9.22 M	3.69 @ #	0.157 M	0.0379 M	<0.075 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		5.68 M	0.562 @ #	0.126 M	0.0271 M	<0.07 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		4.26 M	0.499 @ #	0.178 M	0.0286 M	<0.05 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		8.92 M	0.497 @ #	0.129 M	0.0361 M	<0.075 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		2.6 M	0.181 @ #	0.0388 M	<0.014 M	<0.07 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		4.5 M	0.277 @ #	0.088 M	0.0252 M	<0.075 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		4.47 M	0.223 @ #	0.0841 M	0.0259 M	<0.09 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.718 M	<0.23 @ #	<0.023 M	<0.023 M	<0.115 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		3.67 M	<0.24 @ #	0.0741 M	<0.024 M	<0.12 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		61.1	21.1	1.5	0.253	<0.59	<0.118

CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			CPBR13	0.80 - 0.80	Soil/Solid (S)	06/08/2019	00:00	16/08/2019	190816-122	20535767	
Naphthalene-d8 % recovery**	%	TM218	77.8								
Acenaphthene-d10 % recovery**	%	TM218	76.9								
Phenanthrene-d10 % recovery**	%	TM218	71.9								
Chrysene-d12 % recovery**	%	TM218	58.4								
Perylene-d12 % recovery**	%	TM218	50.6								
Naphthalene	<0.009 mg/kg	TM218	0.0545 @ #								
Acenaphthylene	<0.012 mg/kg	TM218	<0.012 @ #								
Acenaphthene	<0.008 mg/kg	TM218	0.0147 @ #								
Fluorene	<0.01 mg/kg	TM218	0.0264 @ #								
Phenanthrene	<0.015 mg/kg	TM218	0.175 @ #								
Anthracene	<0.016 mg/kg	TM218	0.0293 @ #								
Fluoranthene	<0.017 mg/kg	TM218	0.164 @ #								
Pyrene	<0.015 mg/kg	TM218	0.119 @ #								
Benz(a)anthracene	<0.014 mg/kg	TM218	0.104 @ #								
Chrysene	<0.01 mg/kg	TM218	0.125 @ #								
Benzo(b)fluoranthene	<0.015 mg/kg	TM218	0.148 @ #								
Benzo(k)fluoranthene	<0.014 mg/kg	TM218	0.0416 @ #								
Benzo(a)pyrene	<0.015 mg/kg	TM218	0.0708 @ #								
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218	0.0525 @ #								
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218	<0.023 @ #								
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218	0.0546 @ #								
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218	1.17								

Validated

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BHCP104	BHCP104	BHCP104	CPB2	CPB2	CPB2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2019	13/08/2019	13/08/2019	13/08/2019	13/08/2019	13/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535920	20535928	20535937	20535817	20535834	20535843
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		91 @	93.2	73.8	72 @	90.4 @	94.5 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.752 @ M	0.833 M	2.27 M	31.7 @ M	13.5 @ M	10.3 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02	<0.02	0.0517 @	0.0149 @	<0.01 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.0296 @	0.0269	0.0571	0.107 @	0.0629 @	0.0372 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.123 @	0.15	0.567	0.505 @	0.172 @	0.383 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.207 @	0.198	0.617	18.3 @	7.82 @	5.74 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		9.49	10.1	16	60.4	14.5	184
Aliphatics >C16-C21	<0.1 mg/kg	TM173		32.4	32.5	45.3	109	38.5	276
Aliphatics >C21-C35	<0.1 mg/kg	TM173		399	335	508	216	135	321
Aliphatics >C35-C44	<0.1 mg/kg	TM173		400	175	616	93.1	58.6	162
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		841	552	1190	478	246	943
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.0889 @	0.115	0.115	0.142 @	0.0458 @	0.0274 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		0.0627 @	0.103	0.113	0.0814 @	0.0267 @	0.0274 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0821 @	0.1	0.377	0.337 @	0.114 @	0.255 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.139 @	0.132	0.411	12.2 @	5.22 @	3.83 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		6.47	4.85	6.73	359	53.9	131
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		26.9	25.7	29.7	997	176	323
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		381	353	498	1310	350	577
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		459	256	690	399	135	250
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		198	107	334	147	51	95.4
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		873	640	1230	3060	715	1280
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1720	1190	2410	3570	975	2230

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB4	CPB4	CPB4	CPB6	CPB10	CPB10
			Depth (m)	2.70 - 2.70	4.70 - 4.70	7.70 - 7.70	2.90 - 2.90	4.30 - 4.30	8.30 - 8.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2019	13/08/2019	13/08/2019	12/08/2019	13/08/2019	13/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535879	20535886	20535896	20535775	20535904	20535912
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		75 @	99.1	125 @	122 @	87.3 @	122 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 M	<0.2 @ M	<0.2 @ M	<0.1 @ M	<0.1 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02	<0.02 @	<0.02 @	<0.01 @	<0.01 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02	<0.02 @	<0.02 @	<0.01 @	<0.01 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02	<0.02 @	0.0328 @	<0.01 @	<0.01 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02	<0.02 @	0.0537 @	<0.01 @	<0.01 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1	91.5	<0.1	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		27.2	<0.1	27.2	<0.1	22.9	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	1.15	<0.1	1.39	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		27.2	<0.1	120	<0.1	24.3	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02	<0.02 @	<0.02 @	<0.01 @	<0.01 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02	<0.02 @	<0.02 @	<0.01 @	<0.01 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02	<0.02 @	0.0223 @	<0.01 @	<0.01 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02	<0.02 @	0.0367 @	<0.01 @	<0.01 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	0.171	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		4.21	<0.1	3.25	<0.1	0.86	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		147	<0.1	75.7	3.51	44.5	<0.1
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		24.8	1.28	29.5	1.63	9.38	<0.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		8.84	<0.1	4.8	<0.1	2.92	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		176	1.28	109	5.13	54.7	<0.1
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		203	1.28	228	5.19	79	<0.1

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB13	CPB13	CPBP102	CPBP102	CPBP102	CPBR5
			Depth (m)	1.00 - 1.00	2.70 - 2.70	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/08/2019	06/08/2019	13/08/2019	13/08/2019	13/08/2019	08/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535750	20535825	20535851	20535862	20535869	20535944
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		46 @	101 @	103 @	109 @	99.6 @	73.4 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 @ #	<0.2 @ M	<0.2 @ M	0.216 @ M	<0.1 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	<0.01 @	<0.01 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	<0.01 @	<0.01 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	0.0252 @	<0.01 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	0.0866 @	<0.01 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		4	<0.1	<0.1	1.08	0.143	2.11
Aliphatics >C16-C21	<0.1 mg/kg	TM173		18.3	<0.1	0.89	2.82	1.57	18
Aliphatics >C21-C35	<0.1 mg/kg	TM173		55.4	6.23	10.6	18.5	11.9	68.8
Aliphatics >C35-C44	<0.1 mg/kg	TM173		8.35	<0.1	2.42	7.83	2.42	32.2
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		86.1	6.23	14	30.2	16.1	121
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	<0.01 @	<0.01 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	0.011 @	<0.01 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	0.0164 @	<0.01 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	0.0581 @	<0.01 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		6.13	<0.1	0.699	<0.1	0.381	6.73
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		27.6	1.34	3.36	5.05	5.99	73.3
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		96.1	5.49	14.1	38.2	46.8	304
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		30.6	1.63	7.07	16.5	19.7	138
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		9.39	<0.1	2.79	4.92	7.52	48
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		160	8.45	25.2	59.7	72.9	522
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		246	14.7	39.2	90.1	89	643

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR5	CPBR5	CPBR8	CPBR8	CPBR8	CPBR8
			Depth (m)	0.60 - 0.60	1.20 - 1.20	3.80 - 3.80	4.80 - 4.80	6.80 - 6.80	8.80 - 8.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/08/2019	08/08/2019	13/08/2019	13/08/2019	13/08/2019	13/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535950	20535762	20535782	20535791	20535798	20535805
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		79 @	98.4 @	101 @	80 @	113 @	94 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 @ M	1.73 @ #	<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01 @	<0.1 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01 @	<0.1 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01 @	<0.1 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01 @	0.885 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		5.75	5.79	1.36	<0.1	0.478	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		40.8	39.3	20.8	0.828	7.14	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		66.3	44.4	18.6	1.9	19.7	<0.1
Aliphatics >C35-C44	<0.1 mg/kg	TM173		20.2	13.7	<0.1	<0.1	<0.1	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		133	103	40.7	2.73	27.4	<0.1
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01 @	<0.1 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01 @	<0.1 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01 @	<0.1 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01 @	0.59 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		4.82	70.1	3.28	<0.1	0.312	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		80.7	529	24.1	1.52	1.06	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		278	769	91.3	16.7	47.4	3.33
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		90.4	192	14.7	6.17	12.9	0.444
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		27.6	56.7	4.74	2.7	3.87	<0.1
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		454	1560	133	24.4	61.7	3.77
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		587	1660	174	27.1	89	3.77

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			CPBR13	0.80 - 0.80	Soil/Solid (S)	06/08/2019	00:00	16/08/2019	190816-122	20535767	
GRO Surrogate % recovery**	%	TM089	90 @								
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089	0.321 @ #								
Aliphatics >C5-C6	<0.01 mg/kg	TM089	<0.02 @								
Aliphatics >C6-C8	<0.01 mg/kg	TM089	0.0241 @								
Aliphatics >C8-C10	<0.01 mg/kg	TM089	0.0307 @								
Aliphatics >C10-C12	<0.01 mg/kg	TM089	0.14 @								
Aliphatics >C12-C16	<0.1 mg/kg	TM173	13.6								
Aliphatics >C16-C21	<0.1 mg/kg	TM173	19.9								
Aliphatics >C21-C35	<0.1 mg/kg	TM173	33.5								
Aliphatics >C35-C44	<0.1 mg/kg	TM173	7.15								
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173	74.1								
Aromatics >EC5-EC7	<0.01 mg/kg	TM089	<0.02 @								
Aromatics >EC7-EC8	<0.01 mg/kg	TM089	<0.02 @								
Aromatics >EC8-EC10	<0.01 mg/kg	TM089	0.0208 @								
Aromatics >EC10-EC12	<0.01 mg/kg	TM089	0.0932 @								
Aromatics >EC12-EC16	<0.1 mg/kg	TM173	4.87								
Aromatics >EC16-EC21	<0.1 mg/kg	TM173	14.9								
Aromatics >EC21-EC35	<0.1 mg/kg	TM173	33.3								
Aromatics >EC35-EC44	<0.1 mg/kg	TM173	8.44								
Aromatics >EC40-EC44	<0.1 mg/kg	TM173	2.02								
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173	61.5								
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173	136								

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BHCP104	BHCP104	BHCP104	CPB2	CPB2	CPB2
			Depth (m)	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.20 - 1.20
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2019	13/08/2019	13/08/2019	13/08/2019	13/08/2019	13/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535920	20535928	20535937	20535817	20535834	20535843
			AGS Reference						
Dibromofluoromethane**	%	TM116		101	107	106	95.5	99.9	102
Toluene-d8**	%	TM116		97.6	96.7	96.3	98.4	97.3	97.9
4-Bromofluorobenzene**	%	TM116		96.3	97	95.6	85.7	86.5	90
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		0.193 M	0.146 M	0.126 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		0.109 M	0.114 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB4	CPB4	CPB4	CPB6	CPB10	CPB10
			Depth (m)	2.70 - 2.70	4.70 - 4.70	7.70 - 7.70	2.90 - 2.90	4.30 - 4.30	8.30 - 8.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	13/08/2019	13/08/2019	13/08/2019	12/08/2019	13/08/2019	13/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535879	20535886	20535896	20535775	20535904	20535912
			AGS Reference						
Dibromofluoromethane**	%	TM116		102	106	103	112	104	103
Toluene-d8**	%	TM116		97.5	99.4	98	99.4	94.8	101
4-Bromofluorobenzene**	%	TM116		89.3	99.3	90.2	93.2	80.3	97.3
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sum of BTEX	<0.04 mg/kg	TM116		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB13	CPB13	CPBP102	CPBP102	CPBP102	CPBR5
			Depth (m)	1.00 - 1.00	2.70 - 2.70	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	06/08/2019	06/08/2019	13/08/2019	13/08/2019	13/08/2019	08/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535750	20535825	20535851	20535862	20535869	20535944
			AGS Reference						
Dibromofluoromethane**	%	TM116		88.9 @	107 @	103	105	104	98.3 @
Toluene-d8**	%	TM116		92.2 @	100 @	100	100	99.4	91.8 @
4-Bromofluorobenzene**	%	TM116		75.1 @	97.5 @	95.9	96.8	98.6	78.7 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ M	<0.1 M	<0.1 M	<0.1 M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ #	<0.09 @ M	<0.09 M	<0.09 M	<0.09 M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ #	<0.07 @ M	<0.07 M	<0.07 M	<0.07 M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ #	<0.04 @ M	<0.04 M	<0.04 M	<0.04 M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 #	<0.1 #	<0.1 #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ M	<0.1 M	<0.1 M	<0.1 M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2	<0.2	<0.2	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4	<0.4	<0.4	<0.4 @

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR5	CPBR5	CPBR8	CPBR8	CPBR8	CPBR8
			Depth (m)	0.60 - 0.60	1.20 - 1.20	3.80 - 3.80	4.80 - 4.80	6.80 - 6.80	8.80 - 8.80
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/08/2019	08/08/2019	13/08/2019	13/08/2019	13/08/2019	13/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			SDG Ref	190816-122	190816-122	190816-122	190816-122	190816-122	190816-122
			Lab Sample No.(s)	20535950	20535762	20535782	20535791	20535798	20535805
			AGS Reference						
Dibromofluoromethane**	%	TM116		107 @	108 @	110	107	109	109
Toluene-d8**	%	TM116		96.4 @	97.3 @	94.1	95.4	96.3	102
4-Bromofluorobenzene**	%	TM116		91.1 @	95.9 @	75.3	73.7	84.2	94.7
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ #	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ #	<0.09 M	<0.09 M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ #	<0.07 M	<0.07 M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ #	<0.04 M	<0.04 M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ #	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2	<0.2	<0.2	<0.2
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4	<0.4	<0.4	<0.4

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			CPBR13	0.80 - 0.80	Soil/Solid (S)	06/08/2019	00:00	16/08/2019	190816-122	20535767	
Dibromofluoromethane**	%	TM116	100 @								
Toluene-d8**	%	TM116	98.6 @								
4-Bromofluorobenzene**	%	TM116	91.6 @								
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116	<0.1 @ #								
Benzene	<0.009 mg/kg	TM116	<0.09 @ #								
Toluene	<0.007 mg/kg	TM116	<0.07 @ #								
Ethylbenzene	<0.004 mg/kg	TM116	<0.04 @ #								
p/m-Xylene	<0.01 mg/kg	TM116	<0.1 @ #								
o-Xylene	<0.01 mg/kg	TM116	<0.1 @ #								
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.2 @								
Sum of BTEX	<0.04 mg/kg	TM116	<0.4 @								

CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Cust. Sample Ref. / Depth (m) / Sample Type / Date Sampled / Date Receieved / SDG / Original Sample / Method Number	Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
BHCP104 / 0.50 - 0.50 / SOLID / 13/08/2019 00:00:00 / 16/08/2019 19:19:00 / 190816-122 / 20535920 / TM048	21/08/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
BHCP104 / 1.00 - 1.00 / SOLID / 13/08/2019 00:00:00 / 16/08/2019 19:19:00 / 190816-122 / 20535928 / TM048	20/08/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
BHCP104 / 1.50 - 1.50 / SOLID / 13/08/2019 00:00:00 / 16/08/2019 19:19:00 / 190816-122 / 20535937 / TM048	20/08/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
CPB2 / 0.20 - 0.20 / SOLID / 13/08/2019 00:00:00 / 16/08/2019 19:19:00 / 190816-122 / 20535817 / TM048	20/08/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
CPB2 / 0.50 - 0.50 / SOLID / 13/08/2019 00:00:00 / 16/08/2019 19:19:00 / 190816-122 / 20535834 / TM048	19/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
CPB2 / 1.20 - 1.20 / SOLID / 13/08/2019 00:00:00 / 16/08/2019 19:19:00 / 190816-122 / 20535843 / TM048	22/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
CPB4 / 2.70 - 2.70 / SOLID / 13/08/2019 00:00:00 / 16/08/2019 19:19:00 / 190816-122 / 20535879 / TM048	19/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
CPB6 / 2.90 - 2.90 / SOLID / 12/08/2019 00:00:00 / 16/08/2019 19:19:00 / 190816-122 / 20535775 / TM048	19/08/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB13 1.00 - 1.00 SOLID 06/08/2019 00:00:00 16/08/2019 19:19:00 190816-122 20535750 TM048	22/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB13 2.70 - 2.70 SOLID 06/08/2019 00:00:00 16/08/2019 19:19:00 190816-122 20535825 TM048	22/08/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBP102 0.30 - 0.30 SOLID 13/08/2019 00:00:00 16/08/2019 19:19:00 190816-122 20535851 TM048	22/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBP102 0.50 - 0.50 SOLID 13/08/2019 00:00:00 16/08/2019 19:19:00 190816-122 20535862 TM048	19/08/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBP102 1.50 - 1.50 SOLID 13/08/2019 00:00:00 16/08/2019 19:19:00 190816-122 20535869 TM048	21/08/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR5 0.30 - 0.30 SOLID 08/08/2019 00:00:00 16/08/2019 19:19:00 190816-122 20535944 TM048	21/08/2019	Agnieszka Chelmowska	fibre bundles	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR5 0.60 - 0.60 SOLID 08/08/2019 00:00:00 16/08/2019 19:19:00 190816-122 20535950 TM048	22/08/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR5 1.20 - 1.20 SOLID 08/08/2019 00:00:00 16/08/2019 19:19:00 190816-122 20535762 TM048	22/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR13 0.80 - 0.80 SOLID 06/08/2019 00:00:00 16/08/2019 19:19:00 190816-122 20535767 TM048	22/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Asbestos Quantification - Full

Validated

CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	CPBR5	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.30 - 0.30					
Sample Type	SOLID					
Date Sampled	08/08/2019 00:00:00					
Date Receieved	16/08/2019 19:19:00					
SDG	190816-122					
Original Sample	20535944					
Method Number	TM304					

CERTIFICATE OF ANALYSIS

SDG: 190816-122 Client Reference: Report Number: 520927
Location: Llanwern Order Number: LLA648 Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535750
Sampled Date	06-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000108	<0.00001	0.000108	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.031	<0.01	0.31	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00937	<0.0005	0.0937	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00407	<0.001	0.0407	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000715	<0.0004	0.00715	<0.004	-	-	-
Selenium	0.00505	<0.001	0.0505	<0.01	-	-	-
Vanadium	0.128	<0.001	1.28	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000181	<0.00001	0.000181	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000451	<0.000005	0.000451	<0.00005	-	-	-
Anthracene by GCMS	0.00000694	<0.000005	0.0000694	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000394	<0.000005	0.000394	<0.00005	-	-	-
Fluorene by GCMS	0.00000669	<0.000005	0.0000669	<0.00005	-	-	-
Chrysene by GCMS	0.0000134	<0.000005	0.000134	<0.00005	-	-	-
Pyrene by GCMS	0.0000329	<0.000005	0.000329	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000219	<0.000005	0.000219	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000982	<0.000002	0.0000982	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	9.86
Conductivity (µS/cm)	249.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
10/09/2019 14:48:06

14:47:22 10/09/2019

CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535750
Sampled Date	06-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000216	<0.000082	0.00216	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	9.86
Conductivity (µS/cm)	249.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
10/09/2019 14:48:06

14:47:22 10/09/2019

CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535762
Sampled Date	08-Aug-2019
Customer Sample Ref.	CPBR5
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	15	<0.01	150	<0.1	-	-	-
Total Cyanide (W)	0.16	<0.05	1.6	<0.5	-	-	-
Arsenic	0.00147	<0.0005	0.0147	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	0.02	<0.008	0.2	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.02	<0.016	0.2	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.00135	<0.0002	0.0135	<0.002	-	-	-
Manganese	0.297	<0.003	2.97	<0.03	-	-	-
Nickel	0.00483	<0.0004	0.0483	<0.004	-	-	-
Selenium	0.00121	<0.001	0.0121	<0.01	-	-	-
Vanadium	0.006	<0.001	0.06	<0.01	-	-	-
Zinc	0.00273	<0.001	0.0273	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.127	<0.019	1.27	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000122	<0.00001	0.00122	<0.0001	-	-	-
Acenaphthene by GCMS	0.00605	<0.000005	0.0605	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0079	<0.000005	0.079	<0.00005	-	-	-
Fluoranthene by GCMS	0.0654	<0.000005	0.654	<0.00005	-	-	-
Anthracene by GCMS	0.00256	<0.000005	0.0256	<0.00005	-	-	-
Phenanthrene by GCMS	0.000151	<0.000005	0.00151	<0.00005	-	-	-
Fluorene by GCMS	0.00482	<0.000005	0.0482	<0.00005	-	-	-
Chrysene by GCMS	0.000626	<0.000005	0.00626	<0.00005	-	-	-
Pyrene by GCMS	0.0322	<0.000005	0.322	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000912	<0.000005	0.00912	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000531	<0.000005	0.00531	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000234	<0.000005	0.00234	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000298	<0.000002	0.00298	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000128	<0.000005	0.00128	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000254	<0.000005	0.00254	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000193	<0.000005	0.00193	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	8.26
Conductivity (µS/cm)	268.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.93
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.8
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535762
Sampled Date	08-Aug-2019
Customer Sample Ref.	CPBR5
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.122	<0.000082	1.22	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.401	<0.05	4.01	<0.5	-	-	-
Aliphatics C5-C6	0.023	<0.01	0.23	<0.1	-	-	-
Aliphatics >C6-C8	0.026	<0.01	0.26	<0.1	-	-	-
Aliphatics >C8-C10	0.018	<0.01	0.18	<0.1	-	-	-
Aliphatics >C10-C12	0.191	<0.01	1.91	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.013	<0.01	0.13	<0.1	-	-	-
Aromatics >EC10-EC12	0.127	<0.01	1.27	<0.1	-	-	-
Aromatics >EC12-EC16	0.092	<0.01	0.92	<0.1	-	-	-
Aromatics >EC16-EC21	0.189	<0.01	1.89	<0.1	-	-	-
Aromatics >EC21-EC35	0.025	<0.01	0.25	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.306	<0.01	3.06	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.707	<0.01	7.07	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	8.26
Conductivity (µS/cm)	268.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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14:47:22 10/09/2019

CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535767
Sampled Date	06-Aug-2019
Customer Sample Ref.	CPBR13
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	8.59	<0.01	85.9	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00625	<0.0005	0.0625	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00163	<0.001	0.0163	<0.01	-	-	-
Copper	0.00141	<0.0003	0.0141	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00303	<0.0004	0.0303	<0.004	-	-	-
Selenium	0.00967	<0.001	0.0967	<0.01	-	-	-
Vanadium	0.0839	<0.001	0.839	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000727	<0.00001	0.000727	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000162	<0.000005	0.000162	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000398	<0.000005	0.000398	<0.00005	-	-	-
Fluorene by GCMS	0.0000152	<0.000005	0.000152	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	10.58
Conductivity (µS/cm)	385.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535767
Sampled Date	06-Aug-2019
Customer Sample Ref.	CPBR13
Depth (m)	0.80 - 0.80

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000177	<0.000082	0.00177	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	10.58
Conductivity (µS/cm)	385.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.119	**Natural Moisture Content (%)**	31.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	76
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535775
Sampled Date	12-Aug-2019
Customer Sample Ref.	CPB6
Depth (m)	2.90 - 2.90

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	11.2	<0.01	112	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00283	<0.0005	0.0283	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.02	<0.006	0.2	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.02	<0.016	0.2	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0273	<0.003	0.273	<0.03	-	-	-
Nickel	0.00136	<0.0004	0.0136	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00133	<0.001	0.0133	<0.01	-	-	-
Zinc	0.0026	<0.001	0.026	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.236	<0.019	2.36	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000132	<0.000005	0.000132	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000848	<0.000005	0.0000848	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000494	<0.000005	0.000494	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	0.00000629	<0.000005	0.0000629	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000321	<0.000005	0.000321	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	8.53
Conductivity (µS/cm)	232.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.872

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.119	**Natural Moisture Content (%)**	31.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	76
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535775
Sampled Date	12-Aug-2019
Customer Sample Ref.	CPB6
Depth (m)	2.90 - 2.90

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000109	<0.000082	0.00109	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	8.53
Conductivity (µS/cm)	232.00
Temperature (°C)	23.00
Volume Leachant (Litres)	0.872

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535782
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPBR8
Depth (m)	3.80 - 3.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000117	<0.00001	0.000117	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.28	<0.01	12.8	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0031	<0.0005	0.031	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00235	<0.0003	0.0235	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0175	<0.003	0.175	<0.03	-	-	-
Nickel	0.000603	<0.0004	0.00603	<0.004	-	-	-
Selenium	0.00101	<0.001	0.0101	<0.01	-	-	-
Vanadium	0.00435	<0.001	0.0435	<0.01	-	-	-
Zinc	0.0249	<0.001	0.249	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.241	<0.019	2.41	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000137	<0.00001	0.000137	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000989	<0.000005	0.0000989	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000289	<0.000005	0.000289	<0.00005	-	-	-
Anthracene by GCMS	0.00000622	<0.000005	0.0000622	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000195	<0.000005	0.000195	<0.00005	-	-	-
Fluorene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	7.86
Conductivity (µS/cm)	328.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535782
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPBR8
Depth (m)	3.80 - 3.80

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000124	<0.000082	0.00124	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	7.86
Conductivity (µS/cm)	328.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535791
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPBR8
Depth (m)	4.80 - 4.80

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000102	<0.00001	0.000102	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.91	<0.01	19.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00366	<0.0005	0.0366	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00175	<0.0003	0.0175	<0.003	-	-	-
Lead	0.000422	<0.0002	0.00422	<0.002	-	-	-
Manganese	0.0429	<0.003	0.429	<0.03	-	-	-
Nickel	0.00114	<0.0004	0.0114	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00338	<0.001	0.0338	<0.01	-	-	-
Zinc	0.0094	<0.001	0.094	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000326	<0.000005	0.000326	<0.00005	-	-	-
Anthracene by GCMS	0.00000727	<0.000005	0.0000727	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000163	<0.000005	0.000163	<0.00005	-	-	-
Fluorene by GCMS	0.00000967	<0.000005	0.0000967	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000258	<0.000005	0.000258	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	8.45
Conductivity (µS/cm)	240.00
Temperature (°C)	23.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535791
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPBR8
Depth (m)	4.80 - 4.80

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0000916	<0.000082	0.000916	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	8.45
Conductivity (µS/cm)	240.00
Temperature (°C)	23.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535798
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPBR8
Depth (m)	6.80 - 6.80

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.18	<0.01	11.8	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0101	<0.0005	0.101	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.000423	<0.0002	0.00423	<0.002	-	-	-
Manganese	0.0155	<0.003	0.155	<0.03	-	-	-
Nickel	0.0011	<0.0004	0.011	<0.004	-	-	-
Selenium	0.00162	<0.001	0.0162	<0.01	-	-	-
Vanadium	0.00272	<0.001	0.0272	<0.01	-	-	-
Zinc	0.00474	<0.001	0.0474	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.939	<0.019	9.39	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000292	<0.000005	0.000292	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000818	<0.000005	0.0000818	<0.00005	-	-	-
Fluorene by GCMS	0.00000529	<0.000005	0.0000529	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000236	<0.000005	0.000236	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000576	<0.000005	0.0000576	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000433	<0.000002	0.0000433	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	7.33
Conductivity (µS/cm)	123.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535798
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPBR8
Depth (m)	6.80 - 6.80

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0000867	<0.000082	0.000867	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	7.33
Conductivity (µS/cm)	123.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535805
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPBR8
Depth (m)	8.80 - 8.80

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.312	<0.01	3.12	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00662	<0.0005	0.0662	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00652	<0.003	0.0652	<0.03	-	-	-
Nickel	0.00113	<0.0004	0.0113	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0138	<0.001	0.138	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000267	<0.000005	0.000267	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000245	<0.000005	0.000245	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	8.26
Conductivity (µS/cm)	129.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535805
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPBR8
Depth (m)	8.80 - 8.80

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	8.26
Conductivity (µS/cm)	129.00
Temperature (°C)	21.20
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535817
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB2
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000381	<0.00001	0.000381	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.167	<0.01	1.67	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	0.02	<0.002	0.2	<0.02	-	-	-
Cresols by HPLC (W)	0.03	<0.006	0.3	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.05	<0.016	0.5	<0.16	-	-	-
Chromium	0.00581	<0.001	0.0581	<0.01	-	-	-
Copper	0.00682	<0.0003	0.0682	<0.003	-	-	-
Lead	0.0049	<0.0002	0.049	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00179	<0.0004	0.0179	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0145	<0.001	0.145	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	4.31	<0.00001	43.1	<0.0001	-	-	-
Acenaphthene by GCMS	0.0172	<0.000005	0.172	<0.00005	-	-	-
Acenaphthylene by GCMS	0.298	<0.000005	2.98	<0.00005	-	-	-
Fluoranthene by GCMS	0.036	<0.000005	0.36	<0.00005	-	-	-
Anthracene by GCMS	0.0231	<0.000005	0.231	<0.00005	-	-	-
Phenanthrene by GCMS	0.167	<0.000005	1.67	<0.00005	-	-	-
Fluorene by GCMS	0.127	<0.000005	1.27	<0.00005	-	-	-
Chrysene by GCMS	0.0076	<0.000005	0.076	<0.00005	-	-	-
Pyrene by GCMS	0.0224	<0.000005	0.224	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00636	<0.000005	0.0636	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00895	<0.000005	0.0895	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00592	<0.000005	0.0592	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0017	<0.000002	0.017	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0051	<0.000005	0.051	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0031	<0.000005	0.031	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	12.50
Conductivity (µS/cm)	5,080.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.8
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535817
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB2
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	5.04	<0.000082	50.4	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	3.38	<0.05	33.8	<0.5	-	-	-
Aliphatics C5-C6	0.03	<0.01	0.3	<0.1	-	-	-
Aliphatics >C6-C8	0.033	<0.01	0.33	<0.1	-	-	-
Aliphatics >C8-C10	0.033	<0.01	0.33	<0.1	-	-	-
Aliphatics >C10-C12	1.95	<0.01	19.5	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.033	<0.01	0.33	<0.1	-	-	-
Aromatics >EC10-EC12	1.3	<0.01	13	<0.1	-	-	-
Aromatics >EC12-EC16	0.363	<0.01	3.63	<0.1	-	-	-
Aromatics >EC16-EC21	0.269	<0.01	2.69	<0.1	-	-	-
Aromatics >EC21-EC35	0.019	<0.01	0.19	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.651	<0.01	6.51	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	4.03	<0.01	40.3	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	0.004	<0.003	0.04	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	12.50
Conductivity (µS/cm)	5,080.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.122	**Natural Moisture Content (%)**	35.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	74
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535825
Sampled Date	06-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	2.70 - 2.70

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.84	<0.01	18.4	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00211	<0.0005	0.0211	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.01	<0.006	0.1	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0294	<0.003	0.294	<0.03	-	-	-
Nickel	0.000736	<0.0004	0.00736	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000751	<0.000005	0.0000751	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000736	<0.000005	0.0000736	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000268	<0.000005	0.000268	<0.00005	-	-	-
Anthracene by GCMS	0.00000579	<0.000005	0.0000579	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000449	<0.000005	0.000449	<0.00005	-	-	-
Fluorene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	8.08
Conductivity (µS/cm)	205.00
Temperature (°C)	21.50
Volume Leachant (Litres)	0.868

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.122	**Natural Moisture Content (%)**	35.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	74
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535825
Sampled Date	06-Aug-2019
Customer Sample Ref.	CPB13
Depth (m)	2.70 - 2.70

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000129	<0.000082	0.00129	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	8.08
Conductivity (µS/cm)	205.00
Temperature (°C)	21.50
Volume Leachant (Litres)	0.868

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.61
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.8
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535834
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000494	<0.00001	0.000494	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.175	<0.01	1.75	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000524	<0.0005	0.00524	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	0.02	<0.002	0.2	<0.02	-	-	-
Cresols by HPLC (W)	0.02	<0.006	0.2	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.04	<0.016	0.4	<0.16	-	-	-
Chromium	0.0075	<0.001	0.075	<0.01	-	-	-
Copper	0.0131	<0.0003	0.131	<0.003	-	-	-
Lead	0.00479	<0.0002	0.0479	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00209	<0.0004	0.0209	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.012	<0.001	0.12	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	1.11	<0.00001	11.1	<0.0001	-	-	-
Acenaphthene by GCMS	0.0063	<0.000005	0.063	<0.00005	-	-	-
Acenaphthylene by GCMS	0.11	<0.000005	1.1	<0.00005	-	-	-
Fluoranthene by GCMS	0.00748	<0.000005	0.0748	<0.00005	-	-	-
Anthracene by GCMS	0.00578	<0.000005	0.0578	<0.00005	-	-	-
Phenanthrene by GCMS	0.0586	<0.000005	0.586	<0.00005	-	-	-
Fluorene by GCMS	0.0494	<0.000005	0.494	<0.00005	-	-	-
Chrysene by GCMS	0.000375	<0.000005	0.00375	<0.00005	-	-	-
Pyrene by GCMS	0.00424	<0.000005	0.0424	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000196	<0.000005	0.00196	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00013	<0.000005	0.0013	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000169	<0.000005	0.00169	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.000163	<0.000005	0.00163	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000308	<0.000005	0.00308	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	12.55
Conductivity (µS/cm)	5,030.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	6.61
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.8
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535834
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB2
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	1.35	<0.000082	13.5	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	2.2	<0.05	22	<0.5	-	-	-
Aliphatics C5-C6	0.034	<0.01	0.34	<0.1	-	-	-
Aliphatics >C6-C8	0.035	<0.01	0.35	<0.1	-	-	-
Aliphatics >C8-C10	0.025	<0.01	0.25	<0.1	-	-	-
Aliphatics >C10-C12	1.24	<0.01	12.4	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.025	<0.01	0.25	<0.1	-	-	-
Aromatics >EC10-EC12	0.829	<0.01	8.29	<0.1	-	-	-
Aromatics >EC12-EC16	0.279	<0.01	2.79	<0.1	-	-	-
Aromatics >EC16-EC21	0.187	<0.01	1.87	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.466	<0.01	4.66	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	2.66	<0.01	26.6	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	0.003	<0.003	0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	12.55
Conductivity (µS/cm)	5,030.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535843
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB2
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000345	<0.00001	0.000345	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.1	<0.01	1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	0.05	<0.002	0.5	<0.02	-	-	-
Cresols by HPLC (W)	0.08	<0.006	0.8	<0.06	-	-	-
Xylenols by HPLC (W)	0.05	<0.008	0.5	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.18	<0.016	1.8	<0.16	-	-	-
Chromium	0.00444	<0.001	0.0444	<0.01	-	-	-
Copper	0.0137	<0.0003	0.137	<0.003	-	-	-
Lead	0.000386	<0.0002	0.00386	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00164	<0.0004	0.0164	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0035	<0.001	0.035	<0.01	-	-	-
Zinc	0.00559	<0.001	0.0559	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	2.95	<0.0005	29.5	<0.005	-	-	-
Acenaphthene by GCMS	0.0115	<0.00025	0.115	<0.0025	-	-	-
Acenaphthylene by GCMS	0.189	<0.00025	1.89	<0.0025	-	-	-
Fluoranthene by GCMS	0.0122	<0.00025	0.122	<0.0025	-	-	-
Anthracene by GCMS	0.0107	<0.00025	0.107	<0.0025	-	-	-
Phenanthrene by GCMS	0.0979	<0.00025	0.979	<0.0025	-	-	-
Fluorene by GCMS	0.0934	<0.00025	0.934	<0.0025	-	-	-
Chrysene by GCMS	0.000748	<0.00025	0.00748	<0.0025	-	-	-
Pyrene by GCMS	0.00692	<0.00025	0.0692	<0.0025	-	-	-
Benz(a)anthracene by GCMS	0.0007	<0.00025	0.007	<0.0025	-	-	-
Benzo(b)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(k)fluoranthene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(a)pyrene by GCMS	<0.0001	<0.0001	<0.001	<0.001	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Benzo(ghi)perylene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-
Indeno(123cd)pyrene by GCMS	<0.00025	<0.00025	<0.0025	<0.0025	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	12.10
Conductivity (µS/cm)	1,790.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.41
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.4
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535843
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB2
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	3.38	<0.0041	33.8	<0.041	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	5.18	<0.05	51.8	<0.5	-	-	-
Aliphatics C5-C6	0.036	<0.01	0.36	<0.1	-	-	-
Aliphatics >C6-C8	0.038	<0.01	0.38	<0.1	-	-	-
Aliphatics >C8-C10	0.047	<0.01	0.47	<0.1	-	-	-
Aliphatics >C10-C12	2.99	<0.01	29.9	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.06	<0.01	0.6	<0.1	-	-	-
Aromatics >EC10-EC12	2	<0.01	20	<0.1	-	-	-
Aromatics >EC12-EC16	0.552	<0.01	5.52	<0.1	-	-	-
Aromatics >EC16-EC21	0.374	<0.01	3.74	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.926	<0.01	9.26	<0.1	-	-	-
Benzene by GC	0.007	<0.007	0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	6.11	<0.01	61.1	<0.1	-	-	-
Toluene by GC	0.007	<0.004	0.07	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	0.018	<0.008	0.18	<0.08	-	-	-
o Xylene by GC	0.01	<0.003	0.1	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.028	<0.011	0.28	<0.11	-	-	-
Sum of BTEX by GC	0.042	<0.028	0.42	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	12.10
Conductivity (µS/cm)	1,790.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	5.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.5
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535851
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPBP102
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.000179	<0.00001	0.00179	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0166	<0.01	0.166	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00115	<0.001	0.0115	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00082	<0.0004	0.0082	<0.004	-	-	-
Selenium	0.00592	<0.001	0.0592	<0.01	-	-	-
Vanadium	0.0953	<0.001	0.953	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000681	<0.00001	0.000681	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000425	<0.000005	0.000425	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000679	<0.000005	0.000679	<0.00005	-	-	-
Anthracene by GCMS	0.00000988	<0.000005	0.0000988	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000578	<0.000005	0.000578	<0.00005	-	-	-
Fluorene by GCMS	0.00000962	<0.000005	0.0000962	<0.00005	-	-	-
Chrysene by GCMS	0.00000896	<0.000005	0.0000896	<0.00005	-	-	-
Pyrene by GCMS	0.0000963	<0.000005	0.000963	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	10.48
Conductivity (µS/cm)	365.00
Temperature (°C)	23.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.096	**Natural Moisture Content (%)**	5.82
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.5
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535851
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPBP102
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000372	<0.000082	0.00372	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	10.48
Conductivity (µS/cm)	365.00
Temperature (°C)	23.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535862
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPBP102
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0235	<0.01	0.235	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0054	<0.001	0.054	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000648	<0.0004	0.00648	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00715	<0.001	0.0715	<0.01	-	-	-
Zinc	0.00325	<0.001	0.0325	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00208	<0.00001	0.0208	<0.0001	-	-	-
Acenaphthene by GCMS	0.000183	<0.000005	0.00183	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Fluoranthene by GCMS	0.00133	<0.000005	0.0133	<0.00005	-	-	-
Anthracene by GCMS	0.0000548	<0.000005	0.000548	<0.00005	-	-	-
Phenanthrene by GCMS	0.000727	<0.000005	0.00727	<0.00005	-	-	-
Fluorene by GCMS	0.0000546	<0.000005	0.000546	<0.00005	-	-	-
Chrysene by GCMS	0.000125	<0.000005	0.00125	<0.00005	-	-	-
Pyrene by GCMS	0.00128	<0.000005	0.0128	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000936	<0.000005	0.000936	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000261	<0.000005	0.000261	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000129	<0.000005	0.000129	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000883	<0.000002	0.0000883	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	11.84
Conductivity (µS/cm)	1,110.00
Temperature (°C)	23.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.65
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.2
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535862
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPBP102
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00598	<0.000082	0.0598	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	11.84
Conductivity (µS/cm)	1,110.00
Temperature (°C)	23.10
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535869
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPBP102
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000165	<0.00001	0.000165	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0139	<0.01	0.139	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00438	<0.001	0.0438	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00048	<0.0004	0.0048	<0.004	-	-	-
Selenium	0.00124	<0.001	0.0124	<0.01	-	-	-
Vanadium	0.0128	<0.001	0.128	<0.01	-	-	-
Zinc	0.00768	<0.001	0.0768	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000749	<0.00001	0.00749	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000384	<0.000005	0.000384	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000593	<0.000005	0.0000593	<0.00005	-	-	-
Fluoranthene by GCMS	0.000604	<0.000005	0.00604	<0.00005	-	-	-
Anthracene by GCMS	0.000037	<0.000005	0.00037	<0.00005	-	-	-
Phenanthrene by GCMS	0.000318	<0.000005	0.00318	<0.00005	-	-	-
Fluorene by GCMS	0.0000169	<0.000005	0.000169	<0.00005	-	-	-
Chrysene by GCMS	0.0000696	<0.000005	0.000696	<0.00005	-	-	-
Pyrene by GCMS	0.000602	<0.000005	0.00602	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000446	<0.000005	0.000446	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000022	<0.000005	0.00022	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000857	<0.000005	0.0000857	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000719	<0.000002	0.0000719	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	11.00
Conductivity (µS/cm)	964.00
Temperature (°C)	23.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535869
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPBP102
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00252	<0.000082	0.0252	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	11.00
Conductivity (µS/cm)	964.00
Temperature (°C)	23.50
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.300	**Natural Moisture Content (%)**	233
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	30
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535879
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB4
Depth (m)	2.70 - 2.70

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	3.53	<0.01	35.3	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00325	<0.0005	0.0325	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.164	<0.003	1.64	<0.03	-	-	-
Nickel	0.000986	<0.0004	0.00986	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0026	<0.001	0.026	<0.01	-	-	-
Zinc	0.0071	<0.001	0.071	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.281	<0.019	2.81	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000337	<0.000005	0.000337	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Fluorene by GCMS	0.00000679	<0.000005	0.0000679	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000246	<0.000005	0.000246	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	8.04
Conductivity (µS/cm)	446.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.690

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.300	**Natural Moisture Content (%)**	233
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	30
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535879
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB4
Depth (m)	2.70 - 2.70

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	8.04
Conductivity (µS/cm)	446.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.690

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535886
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB4
Depth (m)	4.70 - 4.70

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.44	<0.01	14.4	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00243	<0.0005	0.0243	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00841	<0.0003	0.0841	<0.003	-	-	-
Lead	0.000414	<0.0002	0.00414	<0.002	-	-	-
Manganese	0.0187	<0.003	0.187	<0.03	-	-	-
Nickel	0.00238	<0.0004	0.0238	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0089	<0.001	0.089	<0.01	-	-	-
Zinc	0.00149	<0.001	0.0149	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000279	<0.000005	0.000279	<0.00005	-	-	-
Anthracene by GCMS	0.0000076	<0.000005	0.000076	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000284	<0.000005	0.000284	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000215	<0.000005	0.000215	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	8.02
Conductivity (µS/cm)	177.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.1
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535886
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB4
Depth (m)	4.70 - 4.70

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0000855	<0.000082	0.000855	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	8.02
Conductivity (µS/cm)	177.00
Temperature (°C)	21.00
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.273	**Natural Moisture Content (%)**	203
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	33
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535896
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB4
Depth (m)	7.70 - 7.70

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	3.81	<0.01	38.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00995	<0.0005	0.0995	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00331	<0.0003	0.0331	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.106	<0.003	1.06	<0.03	-	-	-
Nickel	0.00128	<0.0004	0.0128	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00494	<0.001	0.0494	<0.01	-	-	-
Zinc	0.00444	<0.001	0.0444	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.214	<0.019	2.14	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000134	<0.000005	0.000134	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	7.94
Conductivity (µS/cm)	627.00
Temperature (°C)	23.50
Volume Leachant (Litres)	0.717

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.273	**Natural Moisture Content (%)**	203
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	33
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535896
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB4
Depth (m)	7.70 - 7.70

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	7.94
Conductivity (µS/cm)	627.00
Temperature (°C)	23.50
Volume Leachant (Litres)	0.717

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 Client Reference: Report Number: 520927
Location: Llanwern Order Number: LLA648 Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535904
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB10
Depth (m)	4.30 - 4.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	2.14	<0.01	21.4	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00157	<0.0005	0.0157	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00145	<0.0003	0.0145	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0618	<0.003	0.618	<0.03	-	-	-
Nickel	0.000744	<0.0004	0.00744	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00327	<0.001	0.0327	<0.01	-	-	-
Zinc	0.0591	<0.001	0.591	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.22	<0.019	2.2	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000252	<0.00001	0.00252	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000279	<0.000005	0.000279	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000277	<0.000005	0.000277	<0.00005	-	-	-
Anthracene by GCMS	0.00000605	<0.000005	0.0000605	<0.00005	-	-	-
Phenanthrene by GCMS	0.000028	<0.000005	0.00028	<0.00005	-	-	-
Fluorene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000215	<0.000005	0.000215	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000647	<0.000005	0.0000647	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000317	<0.000002	0.0000317	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	7.92
Conductivity (µS/cm)	291.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535904
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB10
Depth (m)	4.30 - 4.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000391	<0.000082	0.00391	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	7.92
Conductivity (µS/cm)	291.00
Temperature (°C)	23.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.135	**Natural Moisture Content (%)**	49.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	67
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535912
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB10
Depth (m)	8.30 - 8.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000107	<0.00001	0.000107	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.69	<0.01	16.9	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00298	<0.0005	0.0298	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00178	<0.0003	0.0178	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0409	<0.003	0.409	<0.03	-	-	-
Nickel	0.00221	<0.0004	0.0221	<0.004	-	-	-
Selenium	0.00122	<0.001	0.0122	<0.01	-	-	-
Vanadium	0.00392	<0.001	0.0392	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000929	<0.000005	0.0000929	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000055	<0.000005	0.000055	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000724	<0.000005	0.0000724	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	8.54
Conductivity (µS/cm)	285.00
Temperature (°C)	23.10
Volume Leachant (Litres)	0.856

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.135	**Natural Moisture Content (%)**	49.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	67
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535912
Sampled Date	13-Aug-2019
Customer Sample Ref.	CPB10
Depth (m)	8.30 - 8.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	8.54
Conductivity (µS/cm)	285.00
Temperature (°C)	23.10
Volume Leachant (Litres)	0.856

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535920
Sampled Date	13-Aug-2019
Customer Sample Ref.	BHCP104
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0446	<0.01	0.446	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	0.01	<0.002	0.1	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00373	<0.001	0.0373	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	0.00213	<0.0002	0.0213	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000456	<0.0004	0.00456	<0.004	-	-	-
Selenium	0.00155	<0.001	0.0155	<0.01	-	-	-
Vanadium	0.00277	<0.001	0.0277	<0.01	-	-	-
Zinc	0.00608	<0.001	0.0608	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00347	<0.00001	0.0347	<0.0001	-	-	-
Acenaphthene by GCMS	0.000122	<0.000005	0.00122	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000019	<0.000005	0.00019	<0.00005	-	-	-
Fluoranthene by GCMS	0.000161	<0.000005	0.00161	<0.00005	-	-	-
Anthracene by GCMS	0.000036	<0.000005	0.00036	<0.00005	-	-	-
Phenanthrene by GCMS	0.000291	<0.000005	0.00291	<0.00005	-	-	-
Fluorene by GCMS	0.0000537	<0.000005	0.000537	<0.00005	-	-	-
Chrysene by GCMS	0.00000928	<0.000005	0.0000928	<0.00005	-	-	-
Pyrene by GCMS	0.000127	<0.000005	0.00127	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000014	<0.000005	0.00014	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	12.31
Conductivity (µS/cm)	2,930.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535920
Sampled Date	13-Aug-2019
Customer Sample Ref.	BHCP104
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0043	<0.000082	0.043	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.08	<0.05	0.8	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.025	<0.01	0.25	<0.1	-	-	-
Aromatics >C7-C8	0.01	<0.01	0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.015	<0.01	0.15	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	0.025	<0.007	0.25	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.08	<0.01	0.8	<0.1	-	-	-
Toluene by GC	0.01	<0.004	0.1	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	0.003	<0.003	0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	0.035	<0.028	0.35	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	12.31
Conductivity (µS/cm)	2,930.00
Temperature (°C)	23.30
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535928
Sampled Date	13-Aug-2019
Customer Sample Ref.	BHCP104
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.045	<0.01	0.45	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.03	<0.006	0.3	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.03	<0.016	0.3	<0.16	-	-	-
Chromium	0.0037	<0.001	0.037	<0.01	-	-	-
Copper	0.00311	<0.0003	0.0311	<0.003	-	-	-
Lead	0.0044	<0.0002	0.044	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00101	<0.0004	0.0101	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00204	<0.001	0.0204	<0.01	-	-	-
Zinc	0.0101	<0.001	0.101	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00111	<0.00001	0.0111	<0.0001	-	-	-
Acenaphthene by GCMS	0.000151	<0.000005	0.00151	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000267	<0.000005	0.000267	<0.00005	-	-	-
Fluoranthene by GCMS	0.000148	<0.000005	0.00148	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.000407	<0.000005	0.00407	<0.00005	-	-	-
Fluorene by GCMS	0.00022	<0.000005	0.0022	<0.00005	-	-	-
Chrysene by GCMS	0.000009	<0.000005	0.00009	<0.00005	-	-	-
Pyrene by GCMS	0.000124	<0.000005	0.00124	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	11.59
Conductivity (µS/cm)	3,760.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.76
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.8
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535928
Sampled Date	13-Aug-2019
Customer Sample Ref.	BHCP104
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00221	<0.000082	0.0221	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.072	<0.01	0.72	<0.1	-	-	-
Aromatics >EC16-EC21	0.039	<0.01	0.39	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.111	<0.01	1.11	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.117	<0.01	1.17	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	11.59
Conductivity (µS/cm)	3,760.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535937
Sampled Date	13-Aug-2019
Customer Sample Ref.	BHCP104
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0588	<0.01	0.588	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	0.01	<0.002	0.1	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00594	<0.001	0.0594	<0.01	-	-	-
Copper	0.00871	<0.0003	0.0871	<0.003	-	-	-
Lead	0.00482	<0.0002	0.0482	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00104	<0.0004	0.0104	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00106	<0.001	0.0106	<0.01	-	-	-
Zinc	0.0104	<0.001	0.104	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00124	<0.00001	0.0124	<0.0001	-	-	-
Acenaphthene by GCMS	0.000054	<0.000005	0.00054	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000013	<0.000005	0.00013	<0.00005	-	-	-
Fluoranthene by GCMS	0.000134	<0.000005	0.00134	<0.00005	-	-	-
Anthracene by GCMS	0.0000235	<0.000005	0.000235	<0.00005	-	-	-
Phenanthrene by GCMS	0.000252	<0.000005	0.00252	<0.00005	-	-	-
Fluorene by GCMS	0.0000444	<0.000005	0.000444	<0.00005	-	-	-
Chrysene by GCMS	0.00000925	<0.000005	0.0000925	<0.00005	-	-	-
Pyrene by GCMS	0.0000981	<0.000005	0.000981	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	12.60
Conductivity (µS/cm)	6,200.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535937
Sampled Date	13-Aug-2019
Customer Sample Ref.	BHCP104
Depth (m)	1.50 - 1.50

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00187	<0.000082	0.0187	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.02	<0.01	0.2	<0.1	-	-	-
Aromatics >EC16-EC21	0.018	<0.01	0.18	<0.1	-	-	-
Aromatics >EC21-EC35	0.012	<0.01	0.12	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.05	<0.01	0.5	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.058	<0.01	0.58	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	21-Aug-2019
pH (pH Units)	12.60
Conductivity (µS/cm)	6,200.00
Temperature (°C)	23.40
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	3.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.2
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535944
Sampled Date	08-Aug-2019
Customer Sample Ref.	CPBR5
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0192	<0.01	0.192	<0.1	-	-	-
Total Cyanide (W)	1.92	<0.05	19.2	<0.5	-	-	-
Arsenic	0.00371	<0.0005	0.0371	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00117	<0.001	0.0117	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0127	<0.003	0.127	<0.03	-	-	-
Nickel	0.00139	<0.0004	0.0139	<0.004	-	-	-
Selenium	0.00393	<0.001	0.0393	<0.01	-	-	-
Vanadium	0.0529	<0.001	0.529	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.869	<0.019	8.69	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000634	<0.00001	0.000634	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000327	<0.000005	0.000327	<0.00005	-	-	-
Fluoranthene by GCMS	0.000144	<0.000005	0.00144	<0.00005	-	-	-
Anthracene by GCMS	0.0000317	<0.000005	0.000317	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000496	<0.000005	0.000496	<0.00005	-	-	-
Fluorene by GCMS	0.0000142	<0.000005	0.000142	<0.00005	-	-	-
Chrysene by GCMS	0.0000799	<0.000005	0.000799	<0.00005	-	-	-
Pyrene by GCMS	0.0001	<0.000005	0.001	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000062	<0.000005	0.00062	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000138	<0.000005	0.00138	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000607	<0.000005	0.000607	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000687	<0.000002	0.000687	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000192	<0.000005	0.000192	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000105	<0.000005	0.00105	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000911	<0.000005	0.000911	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	7.64
Conductivity (µS/cm)	319.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	3.95
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96.2
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535944
Sampled Date	08-Aug-2019
Customer Sample Ref.	CPBR5
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00106	<0.000082	0.0106	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	7.64
Conductivity (µS/cm)	319.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	190816-122	**Client Reference:**		**Report Number:**	520927
Location:	Llanwern	**Order Number:**	LLA648	**Superseded Report:**	520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535950
Sampled Date	08-Aug-2019
Customer Sample Ref.	CPBR5
Depth (m)	0.60 - 0.60

Eluate Analysis	**C_2 Conc^n in 10:1 eluate (mg/l)**		**A_2 10:1 conc^n leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0104	<0.01	0.104	<0.1	-	-	-
Total Cyanide (W)	3.71	<0.05	37.1	<0.5	-	-	-
Arsenic	0.00325	<0.0005	0.0325	<0.005	-	-	-
Free Cyanide (W)	0.07	<0.05	0.7	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00155	<0.001	0.0155	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00633	<0.003	0.0633	<0.03	-	-	-
Nickel	0.00117	<0.0004	0.0117	<0.004	-	-	-
Selenium	0.0026	<0.001	0.026	<0.01	-	-	-
Vanadium	0.0283	<0.001	0.283	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	1.68	<0.019	16.8	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000107	<0.00001	0.000107	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000111	<0.000005	0.000111	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000055	<0.000005	0.00055	<0.00005	-	-	-
Fluoranthene by GCMS	0.000495	<0.000005	0.00495	<0.00005	-	-	-
Anthracene by GCMS	0.0000412	<0.000005	0.000412	<0.00005	-	-	-
Phenanthrene by GCMS	0.000029	<0.000005	0.00029	<0.00005	-	-	-
Fluorene by GCMS	0.0000188	<0.000005	0.000188	<0.00005	-	-	-
Chrysene by GCMS	0.0000767	<0.000005	0.000767	<0.00005	-	-	-
Pyrene by GCMS	0.000335	<0.000005	0.00335	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000593	<0.000005	0.000593	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000182	<0.000005	0.00182	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000908	<0.000005	0.000908	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000938	<0.000002	0.000938	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000279	<0.000005	0.000279	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000166	<0.000005	0.00166	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000145	<0.000005	0.00145	<0.00005	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	8.12
Conductivity (µS/cm)	233.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
10/09/2019 14:48:06

14:47:22 10/09/2019

CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.29
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.5
Particle Size <4mm	>95%		

Case	
SDG	190816-122
Lab Sample Number(s)	20535950
Sampled Date	08-Aug-2019
Customer Sample Ref.	CPBR5
Depth (m)	0.60 - 0.60

Eluate Analysis	**C_2 Concⁿ in 10:1 eluate (mg/l)**		**A_2 10:1 concⁿ leached (mg/kg)**				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00184	<0.000082	0.0184	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	22-Aug-2019
pH (pH Units)	8.12
Conductivity (µS/cm)	233.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG: 190816-122 | Client Reference: | Report Number: 520927
Location: Llanwern | Order Number: LLA648 | Superseded Report: 520053

Test Completion Dates

Lab Sample No(s)	20535920	20535928	20535937	20535817	20535834	20535843	20535879	20535886	20535896	20535775
Customer Sample Ref.	BHCP104	BHCP104	BHCP104	CPB2	CPB2	CPB2	CPB4	CPB4	CPB4	CPB6
AGS Ref.										
Depth	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.20 - 1.20	2.70 - 2.70	4.70 - 4.70	7.70 - 7.70	2.90 - 2.90
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	27-Aug-2019	27-Aug-2019	28-Aug-2019	27-Aug-2019
Ammonium Soil by Titration	22-Aug-2019	27-Aug-2019	22-Aug-2019	22-Aug-2019	27-Aug-2019	22-Aug-2019	27-Aug-2019	22-Aug-2019	22-Aug-2019	22-Aug-2019
Anions by Kone (soil)	21-Aug-2019	21-Aug-2019	22-Aug-2019	22-Aug-2019	23-Aug-2019	21-Aug-2019	22-Aug-2019	22-Aug-2019	21-Aug-2019	23-Aug-2019
Asbestos ID in Solid Samples	21-Aug-2019	20-Aug-2019	20-Aug-2019	20-Aug-2019	19-Aug-2019	22-Aug-2019	19-Aug-2019			19-Aug-2019
CEN 10:1 Leachate (1 Stage)	21-Aug-2019	21-Aug-2019	21-Aug-2019	21-Aug-2019	21-Aug-2019	21-Aug-2019	21-Aug-2019	21-Aug-2019	21-Aug-2019	21-Aug-2019
CEN Readings	23-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	27-Aug-2019	23-Aug-2019	23-Aug-2019
Cyanide Comp/Free/Total/Thiocyanate	24-Aug-2019	24-Aug-2019	24-Aug-2019	24-Aug-2019	24-Aug-2019	24-Aug-2019	24-Aug-2019	24-Aug-2019	24-Aug-2019	24-Aug-2019
Dissolved Metals by ICP-MS	02-Sep-2019	02-Sep-2019	03-Sep-2019	02-Sep-2019	02-Sep-2019	03-Sep-2019	02-Sep-2019	03-Sep-2019	03-Sep-2019	02-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	27-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
EPH CWG (Aliphatic) GC (S)	22-Aug-2019	22-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	22-Aug-2019
EPH CWG (Aromatic) Aqueous GC (W)	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	27-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
EPH CWG (Aromatic) GC (S)	22-Aug-2019	22-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	22-Aug-2019
GRO by GC-FID (S)	28-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	28-Aug-2019	27-Aug-2019	28-Aug-2019	27-Aug-2019
GRO by GC-FID (W)	28-Aug-2019	28-Aug-2019	28-Aug-2019	30-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019
Mercury Dissolved	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019
Metals in solid samples by OES	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	22-Aug-2019	27-Aug-2019	23-Aug-2019	23-Aug-2019
PAH by GCMS	21-Aug-2019	23-Aug-2019	21-Aug-2019	27-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	21-Aug-2019	23-Aug-2019	23-Aug-2019
PAH Spec MS - Aqueous (W)	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
pH	23-Aug-2019	22-Aug-2019	21-Aug-2019	22-Aug-2019	22-Aug-2019	21-Aug-2019	21-Aug-2019	22-Aug-2019	21-Aug-2019	21-Aug-2019
pH Value	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
Phenols by HPLC (S)	21-Aug-2019	23-Aug-2019	23-Aug-2019	21-Aug-2019	22-Aug-2019	21-Aug-2019	23-Aug-2019	22-Aug-2019	21-Aug-2019	21-Aug-2019
Phenols by HPLC (W)	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019
Sample description	17-Aug-2019	17-Aug-2019	17-Aug-2019	16-Aug-2019	16-Aug-2019	16-Aug-2019	16-Aug-2019	16-Aug-2019	17-Aug-2019	16-Aug-2019
Total Organic Carbon	22-Aug-2019	22-Aug-2019	23-Aug-2019	22-Aug-2019	22-Aug-2019	22-Aug-2019	23-Aug-2019	27-Aug-2019	22-Aug-2019	23-Aug-2019
Total Sulphate	27-Aug-2019	22-Aug-2019	22-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	22-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019
Total Sulphur	21-Aug-2019	21-Aug-2019	21-Aug-2019	21-Aug-2019	21-Aug-2019	21-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	21-Aug-2019
TPH CWG (W)	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	28-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
TPH CWG GC (S)	28-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	28-Aug-2019	27-Aug-2019	28-Aug-2019	27-Aug-2019
VOC MS (S)	22-Aug-2019	22-Aug-2019	22-Aug-2019	23-Aug-2019	23-Aug-2019	22-Aug-2019	22-Aug-2019	22-Aug-2019	22-Aug-2019	23-Aug-2019

Lab Sample No(s)	20535904	20535912	20535750	20535825	20535851	20535862	20535869	20535762	20535944	20535950
Customer Sample Ref.	CPB10	CPB10	CPB13	CPB13	CPBP102	CPBP102	CPBP102	CPBR5	CPBR5	CPBR5
AGS Ref.										
Depth	4.30 - 4.30	8.30 - 8.30	1.00 - 1.00	2.70 - 2.70	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	1.20 - 1.20	0.30 - 0.30	0.60 - 0.60
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	27-Aug-2019	27-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	27-Aug-2019	28-Aug-2019	28-Aug-2019
Ammonium Soil by Titration	22-Aug-2019	22-Aug-2019	27-Aug-2019	27-Aug-2019	22-Aug-2019	22-Aug-2019	22-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019
Anions by Kone (soil)	22-Aug-2019	21-Aug-2019	27-Aug-2019	27-Aug-2019	22-Aug-2019	21-Aug-2019	22-Aug-2019	27-Aug-2019	28-Aug-2019	27-Aug-2019
Asbestos ID in Solid Samples			22-Aug-2019	22-Aug-2019	22-Aug-2019	19-Aug-2019	21-Aug-2019	22-Aug-2019	21-Aug-2019	22-Aug-2019
Asbestos Quantification - Full									22-Aug-2019	
CEN 10:1 Leachate (1 Stage)	21-Aug-2019	21-Aug-2019	22-Aug-2019	22-Aug-2019	21-Aug-2019	21-Aug-2019	21-Aug-2019	22-Aug-2019	22-Aug-2019	22-Aug-2019
CEN Readings	23-Aug-2019	23-Aug-2019	27-Aug-2019	27-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019
Cyanide Comp/Free/Total/Thiocyanate	24-Aug-2019	24-Aug-2019	28-Aug-2019	28-Aug-2019	24-Aug-2019	24-Aug-2019	24-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019
Dissolved Metals by ICP-MS	03-Sep-2019	03-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
EPH CWG (Aliphatic) GC (S)	23-Aug-2019	22-Aug-2019	27-Aug-2019	27-Aug-2019	23-Aug-2019	22-Aug-2019	22-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019
EPH CWG (Aromatic) Aqueous GC (W)	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
EPH CWG (Aromatic) GC (S)	23-Aug-2019	22-Aug-2019	27-Aug-2019	27-Aug-2019	23-Aug-2019	22-Aug-2019	22-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019
GRO by GC-FID (S)	27-Aug-2019	27-Aug-2019	28-Aug-2019	27-Aug-2019	28-Aug-2019	27-Aug-2019	27-Aug-2019	28-Aug-2019	28-Aug-2019	27-Aug-2019
GRO by GC-FID (W)	30-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019
Mercury Dissolved	27-Aug-2019	27-Aug-2019	27-Aug-2019	31-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	31-Aug-2019	27-Aug-2019
Metals in solid samples by OES	23-Aug-2019	23-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	29-Aug-2019	27-Aug-2019
PAH by GCMS	21-Aug-2019	23-Aug-2019	29-Aug-2019	29-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	29-Aug-2019	29-Aug-2019	22-Aug-2019
PAH Spec MS - Aqueous (W)	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
pH	22-Aug-2019	22-Aug-2019	27-Aug-2019	27-Aug-2019	23-Aug-2019	21-Aug-2019	21-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019
pH Value	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
Phenols by HPLC (S)	22-Aug-2019	23-Aug-2019	27-Aug-2019	24-Aug-2019	21-Aug-2019	21-Aug-2019	22-Aug-2019	24-Aug-2019	27-Aug-2019	27-Aug-2019
Phenols by HPLC (W)	27-Aug-2019	27-Aug-2019	28-Aug-2019	30-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	30-Aug-2019	29-Aug-2019	30-Aug-2019
Sample description	17-Aug-2019	17-Aug-2019	20-Aug-2019	20-Aug-2019	16-Aug-2019	17-Aug-2019	16-Aug-2019	20-Aug-2019	20-Aug-2019	20-Aug-2019
Total Organic Carbon	27-Aug-2019	22-Aug-2019	27-Aug-2019	27-Aug-2019	22-Aug-2019	23-Aug-2019	22-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019
Total Sulphate	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019
Total Sulphur	27-Aug-2019	21-Aug-2019	27-Aug-2019	27-Aug-2019	21-Aug-2019	21-Aug-2019	21-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019
TPH CWG (W)	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
TPH CWG GC (S)	27-Aug-2019	27-Aug-2019	28-Aug-2019	27-Aug-2019	28-Aug-2019	27-Aug-2019	27-Aug-2019	28-Aug-2019	28-Aug-2019	27-Aug-2019
VOC MS (S)	22-Aug-2019	22-Aug-2019	22-Aug-2019	23-Aug-2019	22-Aug-2019	22-Aug-2019	22-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019

Validated

CERTIFICATE OF ANALYSIS

SDG: 190816-122 **Client Reference:** **Report Number:** 520927
Location: Llanwern **Order Number:** LLA648 **Superseded Report:** 520053

Lab Sample No(s)	20535782	20535791	20535798	20535805	20535767
Customer Sample Ref.	CPBR8	CPBR8	CPBR8	CPBR8	CPBR13
AGS Ref.					
Depth	3.80 - 3.80	4.80 - 4.80	6.80 - 6.80	8.80 - 8.80	0.80 - 0.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low	27-Aug-2019	27-Aug-2019	28-Aug-2019	28-Aug-2019	27-Aug-2019
Ammonium Soil by Titration	22-Aug-2019	22-Aug-2019	27-Aug-2019	22-Aug-2019	27-Aug-2019
Anions by Kone (soil)	22-Aug-2019	22-Aug-2019	22-Aug-2019	21-Aug-2019	27-Aug-2019
Asbestos ID in Solid Samples					22-Aug-2019
CEN 10:1 Leachate (1 Stage)	22-Aug-2019	21-Aug-2019	22-Aug-2019	22-Aug-2019	22-Aug-2019
CEN Readings	27-Aug-2019	23-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019
Cyanide Comp/Free/Total/Thiocyanate	28-Aug-2019	24-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019
Dissolved Metals by ICP-MS	02-Sep-2019	03-Sep-2019	02-Sep-2019	02-Sep-2019	02-Sep-2019
EPH CWG (Aliphatic) Aqueous GC (W)	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
EPH CWG (Aliphatic) GC (S)	22-Aug-2019	23-Aug-2019	22-Aug-2019	22-Aug-2019	27-Aug-2019
EPH CWG (Aromatic) Aqueous GC (W)	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
EPH CWG (Aromatic) GC (S)	22-Aug-2019	23-Aug-2019	22-Aug-2019	22-Aug-2019	27-Aug-2019
GRO by GC-FID (S)	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	28-Aug-2019
GRO by GC-FID (W)	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019	28-Aug-2019
Mercury Dissolved	30-Aug-2019	31-Aug-2019	31-Aug-2019	27-Aug-2019	30-Aug-2019
Metals in solid samples by OES	23-Aug-2019	27-Aug-2019	23-Aug-2019	23-Aug-2019	27-Aug-2019
PAH by GCMS	23-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	29-Aug-2019
PAH Spec MS - Aqueous (W)	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
pH	22-Aug-2019	22-Aug-2019	22-Aug-2019	22-Aug-2019	27-Aug-2019
pH Value	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
Phenols by HPLC (S)	21-Aug-2019	22-Aug-2019	23-Aug-2019	21-Aug-2019	27-Aug-2019
Phenols by HPLC (W)	30-Aug-2019	27-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
Sample description	16-Aug-2019	16-Aug-2019	16-Aug-2019	16-Aug-2019	20-Aug-2019
Total Organic Carbon	22-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	27-Aug-2019
Total Sulphate	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019
Total Sulphur	27-Aug-2019	27-Aug-2019	27-Aug-2019	21-Aug-2019	27-Aug-2019
TPH CWG (W)	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019	30-Aug-2019
TPH CWG GC (S)	27-Aug-2019	27-Aug-2019	27-Aug-2019	27-Aug-2019	28-Aug-2019
VOC MS (S)	23-Aug-2019	23-Aug-2019	23-Aug-2019	23-Aug-2019	22-Aug-2019

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2107).*

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: Scott Bowler

CERTIFICATE OF ANALYSIS

Date of report Generation:	13 September 2019
Customer:	Atkins Global Ltd
Sample Delivery Group (SDG):	190821-98
Your Reference:	
Location:	Llanwern
Report No:	521349

This report has been revised and directly supersedes 520860 in its entirety.

We received 67 samples on Wednesday August 21, 2019 and 66 of these samples were scheduled for analysis which was completed on Friday September 13, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan
Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
20562126	CPB1		3.30 - 3.30	16/08/2019
20562134	CPB1		4.00 - 4.00	16/08/2019
20562154	CPB1		5.20 - 5.20	16/08/2019
20562164	CPB1		8.10 - 8.10	16/08/2019
20562171	CPB9		3.50 - 3.50	16/08/2019
20562103	CPBR1		3.10 - 3.10	15/08/2019
20562111	CPBR1		5.80 - 5.80	15/08/2019
20562119	CPBR1		9.50 - 9.50	15/08/2019
20562084	CPBR6		3.60 - 3.60	15/08/2019
20562092	CPBR6		5.60 - 5.60	15/08/2019
20561965	TPBP102		0.50 - 0.50	14/08/2019
20562062	TPBP102		1.50 - 1.50	14/08/2019
20562055	TPBP104		0.30 - 0.30	15/08/2019
20562069	TPBP104		0.50 - 0.50	15/08/2019
20562077	TPBP104		1.50 - 1.50	15/08/2019
20562286	TPBP105		0.30 - 0.30	19/08/2019
20562294	TPBP105		1.00 - 1.00	19/08/2019
20562301	TPBP105		1.50 - 1.50	19/08/2019
20562348	TPBP108		0.30 - 0.30	19/08/2019
20562356	TPBP108		1.00 - 1.00	19/08/2019
20562363	TPBP108		1.50 - 1.50	19/08/2019
20562478	TPBP109		0.30 - 0.30	19/08/2019
20562485	TPBP109		0.50 - 0.50	19/08/2019
20562493	TPBP109		1.50 - 1.50	19/08/2019
20562500	TPBP111		0.30 - 0.30	15/08/2019
20562507	TPBP111		0.50 - 0.50	15/08/2019
20562515	TPBP111		1.50 - 1.50	15/08/2019
20562005	TPBP112		0.20 - 0.20	15/08/2019
20562013	TPBP112		0.50 - 0.50	15/08/2019
20562020	TPBP112		1.00 - 1.00	15/08/2019
20562027	TPBP113		0.20 - 0.20	15/08/2019
20562035	TPBP113		0.50 - 0.50	15/08/2019
20562043	TPBP113		1.50 - 1.50	15/08/2019
20562397	TPBP117		0.30 - 0.30	19/08/2019
20562406	TPBP117		1.00 - 1.00	19/08/2019
20562414	TPBP117		1.50 - 1.50	19/08/2019
20562429	TPBP118		0.30 - 0.30	19/08/2019
20562439	TPBP118		0.50 - 0.50	19/08/2019
20562448	TPBP118		1.00 - 1.00	19/08/2019
20562455	TPBP118		1.50 - 1.50	19/08/2019
20562230	TPBP128		0.30 - 0.30	16/08/2019
20562247	TPBP128		0.50 - 0.50	16/08/2019
20562255	TPBP128		1.00 - 1.00	16/08/2019
20562263	TPBP128		1.50 - 1.50	16/08/2019
20562141	TPBP132		0.20 - 0.20	14/08/2019
20562238	TPBP132		0.50 - 0.50	14/08/2019
20562327	TPBP132		1.20 - 1.20	14/08/2019
20562422	TPBP132		2.40 - 2.40	14/08/2019
20562310	TPBP133		0.30 - 0.30	19/08/2019
20562318	TPBP133		1.00 - 1.00	19/08/2019
20562337	TPBP133		1.50 - 1.50	19/08/2019
20562374	TPBP137		0.30 - 0.30	19/08/2019
20562381	TPBP137		0.50 - 0.50	19/08/2019
20562389	TPBP137		1.50 - 1.50	19/08/2019
20561981	TPBP140		0.30 - 0.30	15/08/2019
20561988	TPBP140		1.00 - 1.00	15/08/2019
20561996	TPBP140		1.80 - 1.80	15/08/2019

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

20562179	WSBP101	0.30 - 0.30	16/08/2019
20562187	WSBP101	0.50 - 0.50	16/08/2019
20562195	WSBP102	0.30 - 0.50	16/08/2019
20562206	WSBP102	0.50 - 0.50	16/08/2019
20562270	WSBP103	0.30 - 0.30	19/08/2019
20562278	WSBP103	0.50 - 0.50	19/08/2019
20562213	WSBP106	0.30 - 0.30	16/08/2019
20562222	WSBP106	0.50 - 0.50	16/08/2019
20562463	WSBP107	0.30 - 0.30	19/08/2019
20562471	WSBP107	0.50 - 0.50	19/08/2019

Maximum Sample/Coolbox Temperature (°C) : **18.2**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20562126			20562134			20562154			20562164			20562171			20562103			20562111
Customer Sample Reference			CPB1			CPB1			CPB1			CPB1			CPB9			CPBR1			CPBR1
AGS Reference																					
Depth (m)			3.30 - 3.30			4.00 - 4.00			5.20 - 5.20			8.10 - 8.10			3.50 - 3.50			3.10 - 3.10			5.80 - 5.80
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 52	X			X			X			X			X			X			X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 66		X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 66		X			X			X			X			X			X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
CEN Readings	All	NDPs: 0 Tests: 52	X			X			X			X			X			X			X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118	X	X		X	X		X	X		X	X		X	X		X	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 52	X			X			X			X			X			X			X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 52	X			X			X			X			X			X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 66		X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 52	X			X			X			X			X			X			X
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 66		X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 51	X			X			X			X			X			X			
Mercury Dissolved	All	NDPs: 0 Tests: 52	X			X			X			X			X			X			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 66		X			X			X			X			X			X		

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | | |

20562069	TPBP104		0.50 - 0.50	1kg TUB	S		x		x		x					x			
20562055	TPBP104		0.30 - 0.30	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x					x			
20562062	TPBP102		1.50 - 1.50	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S														
20561965	TPBP102		0.50 - 0.50	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x					x			
20562092	CPBR6		5.60 - 5.60	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x					x			
20562084	CPBR6		3.60 - 3.60	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x					x			
20562119	CPBR1		9.50 - 9.50	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		
				1kg TUB	S		x		x		x					x			
20562111	CPBR1		5.80 - 5.80	60g VOC (ALE215)	S														x
				250g Amber Jar (ALE210)	S	x		x		x		x	x	x	x		x		

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20562069			20562077			20562286			20562294			20562301			20562348			20562356
Customer Sample Reference			TPBP104			TPBP104			TPBP105			TPBP105			TPBP105			TPBP108			TPBP108
AGS Reference																					
Depth (m)			0.50 - 0.50			1.50 - 1.50			0.30 - 0.30			1.00 - 1.00			1.50 - 1.50			0.30 - 0.30			1.00 - 1.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 52						X			X						X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
CEN Readings	All	NDPs: 0 Tests: 52						X			X						X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118	X			X		X	X		X	X			X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 52						X			X						X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 52						X			X						X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 52						X			X						X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 66		X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 51						X			X						X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 52						X			X						X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X

| | | |

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20562069		20562077			20562286			20562294			20562301			20562348			20562356
Customer Sample Reference			TPBP104		TPBP104			TPBP105			TPBP105			TPBP105			TPBP108			TPBP108
AGS Reference																				
Depth (m)			0.50 - 0.50		1.50 - 1.50			0.30 - 0.30			1.00 - 1.00			1.50 - 1.50			0.30 - 0.30			1.00 - 1.00
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
PAH by GCMS	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 52						X			X						X			X	
pH	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 52						X			X						X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
Phenols by HPLC (W)	All	NDPs: 0 Tests: 52						X			X						X			X	
Sample description	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
Total Sulphur	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
TPH CWG (W)	All	NDPs: 0 Tests: 52						X			X						X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 66		X			X			X			X			X			X		

20562515	TPBP111		1.50 - 1.50	250g Amber Jar (ALE210)	S	x		x		x		x		x	x	x	x		x				
				1kg TUB	S																		
20562507	TPBP111		0.50 - 0.50	60g VOC (ALE215)	S																	x	
				250g Amber Jar (ALE210)	S	x		x		x		x		x	x	x	x		x				
				1kg TUB	S		x		x		x							x					
20562500	TPBP111		0.30 - 0.30	60g VOC (ALE215)	S																	x	
				250g Amber Jar (ALE210)	S	x		x		x		x		x	x	x	x		x				
				1kg TUB	S		x		x		x							x					
20562493	TPBP109		1.50 - 1.50	60g VOC (ALE215)	S																	x	
				250g Amber Jar (ALE210)	S	x		x		x		x		x	x	x	x		x				
				1kg TUB	S																		
20562485	TPBP109		0.50 - 0.50	60g VOC (ALE215)	S																	x	
				250g Amber Jar (ALE210)	S	x		x		x		x		x	x	x	x		x				
				1kg TUB	S		x		x		x							x					
20562478	TPBP109		0.30 - 0.30	60g VOC (ALE215)	S																	x	
				250g Amber Jar (ALE210)	S	x		x		x		x		x	x	x	x		x				
				1kg TUB	S		x		x		x							x					
20562363	TPBP108		1.50 - 1.50	60g VOC (ALE215)	S																	x	
				250g Amber Jar (ALE210)	S	x		x		x		x		x	x	x	x		x				
				1kg TUB	S																		
20562356	TPBP108		1.00 - 1.00	60g VOC (ALE215)	S																	x	

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20562515	20562005			20562013			20562020			20562027			20562035			20562043	
Customer Sample Reference			TPBP111	TPBP112			TPBP112			TPBP112			TPBP113			TPBP113			TPBP113	
AGS Reference																				
Depth (m)			1.50 - 1.50	0.20 - 0.20			0.50 - 0.50			1.00 - 1.00			0.20 - 0.20			0.50 - 0.50			1.50 - 1.50	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 52		X			X			X			X			X					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 66		X			X			X			X			X			X		
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8														X					
CEN Readings	All	NDPs: 0 Tests: 52		X			X			X			X			X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118		X	X		X	X		X	X		X	X		X	X			X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 52		X			X			X			X			X					
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 52		X			X			X			X			X					
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 52		X			X			X			X			X					
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 66	X			X			X			X			X			X				X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 51		X			X			X			X			X					
Mercury Dissolved	All	NDPs: 0 Tests: 52		X			X			X			X			X					

20562230	TPBP128		0.30 - 0.30	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S		X		X				X			X			X				
				1kg TUB	S	X				X			X		X			X					X	X
20562455	TPBP118		1.50 - 1.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S		X		X				X			X			X				
				1kg TUB	S					X													
20562448	TPBP118		1.00 - 1.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S		X		X				X			X			X				
				1kg TUB	S	X				X			X		X			X					X	X
20562429	TPBP118		0.30 - 0.30	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S		X		X				X			X			X				
				1kg TUB	S	X				X			X		X			X					X	X
20562414	TPBP117		1.50 - 1.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S		X		X				X			X			X				
				1kg TUB	S					X													
20562406	TPBP117		1.00 - 1.00	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S		X		X				X			X			X				
				1kg TUB	S	X				X			X		X			X					X	X
20562397	TPBP117		0.30 - 0.30	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S		X		X				X			X			X				
				1kg TUB	S	X				X	X		X		X			X					X	X

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20562515	20562005			20562013			20562020			20562027			20562035			20562043	
Customer Sample Reference			TPBP111	TPBP112			TPBP112			TPBP112			TPBP113			TPBP113			TPBP113	
AGS Reference																					
Depth (m)			1.50 - 1.50	0.20 - 0.20			0.50 - 0.50			1.00 - 1.00			0.20 - 0.20			0.50 - 0.50			1.50 - 1.50	
Container			60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 52		X			X			X			X			X					
pH	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
pH Value	All	NDPs: 0 Tests: 52		X			X			X			X			X					
Phenols by HPLC (S)	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
Phenols by HPLC (W)	All	NDPs: 0 Tests: 52		X			X			X			X			X					
Sample description	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
Total Organic Carbon	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
Total Sulphate	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
Total Sulphur	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
TPH CWG (W)	All	NDPs: 0 Tests: 52		X			X			X			X			X					
TPH CWG GC (S)	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
VOC MS (S)	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X	

20562230	TPBP128		0.30 - 0.30	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S	x	x		x		x		x		x	x	x	x		x		
				1kg TUB	S			x		x		x							x			
20562455	TPBP118		1.50 - 1.50	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S	x	x		x		x		x		x	x	x	x		x		
				1kg TUB	S																	
20562448	TPBP118		1.00 - 1.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S	x	x		x		x		x		x	x	x	x		x		
				1kg TUB	S			x		x		x							x			
20562429	TPBP118		0.30 - 0.30	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S	x	x		x		x		x		x	x	x	x		x		
				1kg TUB	S			x		x		x							x			
20562414	TPBP117		1.50 - 1.50	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S	x	x		x		x		x		x	x	x	x		x		
				1kg TUB	S																	
20562406	TPBP117		1.00 - 1.00	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S	x	x		x		x		x		x	x	x	x		x		
				1kg TUB	S			x		x		x							x			
20562397	TPBP117		0.30 - 0.30	60g VOC (ALE215)	S																	x
				250g Amber Jar (ALE210)	S	x	x		x		x		x		x	x	x	x		x		
				1kg TUB	S			x		x		x							x			

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20562247			20562255			20562263			20562141			20562238			20562327			20562422
Customer Sample Reference			TPBP128			TPBP128			TPBP128			TPBP132			TPBP132			TPBP132			TPBP132
AGS Reference																					
Depth (m)			0.50 - 0.50			1.00 - 1.00			1.50 - 1.50			0.20 - 0.20			0.50 - 0.50			1.20 - 1.20			2.40 - 2.40
Container			1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 52	X			X						X			X			X			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 66		X			X			X			X			X			X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 66		X			X			X			X			X			X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8				X									X						
CEN Readings	All	NDPs: 0 Tests: 52	X			X						X			X			X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118	X	X		X	X			X		X	X		X	X		X	X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 52	X			X						X			X			X			
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 52	X			X						X			X			X			
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 66		X			X			X			X			X			X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 52	X			X						X			X			X			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 66		X			X			X			X			X			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 51	X			X						X			X			X			
Mercury Dissolved	All	NDPs: 0 Tests: 52	X			X						X			X			X			

20561981	TPBP140		0.30 - 0.30	1kg TUB	S	X			X		X	X	X	X		X			X	X			
20562389	TPBP137		1.50 - 1.50	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S		X	X				X			X		X							
				1kg TUB	S				X															
20562381	TPBP137		0.50 - 0.50	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S		X	X				X			X		X							
				1kg TUB	S	X			X		X	X	X	X		X			X	X			
20562374	TPBP137		0.30 - 0.30	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S		X	X				X			X		X							
				1kg TUB	S	X			X		X	X	X	X		X			X	X			
20562337	TPBP133		1.50 - 1.50	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S		X	X				X			X		X							
				1kg TUB	S				X															
20562318	TPBP133		1.00 - 1.00	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S		X	X				X			X		X							
				1kg TUB	S	X			X	X	X	X	X	X		X			X	X			
20562310	TPBP133		0.30 - 0.30	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S		X	X				X			X		X							
				1kg TUB	S	X			X		X	X	X	X		X			X	X			
20562422	TPBP132		2.40 - 2.40	60g VOC (ALE215)	S													X					
				250g Amber Jar (ALE210)	S		X	X				X			X		X							

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

| | | | | |

20561981	TPBP140		0.30 - 0.30	1kg TUB	S				x			x			x						x		
20562389	TPBP137		1.50 - 1.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S	x		x			x			x			x			x			x	
				1kg TUB	S																			
20562381	TPBP137		0.50 - 0.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S	x		x			x			x			x			x			x	
				1kg TUB	S				x			x			x						x			
20562374	TPBP137		0.30 - 0.30	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S	x		x			x			x			x			x			x	
				1kg TUB	S				x			x			x						x			
20562337	TPBP133		1.50 - 1.50	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S	x		x			x			x			x			x			x	
				1kg TUB	S																			
20562318	TPBP133		1.00 - 1.00	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S	x		x			x			x			x			x			x	
				1kg TUB	S				x			x			x						x			
20562310	TPBP133		0.30 - 0.30	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S	x		x			x			x			x			x			x	
				1kg TUB	S				x			x			x						x			
20562422	TPBP132		2.40 - 2.40	60g VOC (ALE215)	S																		x
				250g Amber Jar (ALE210)	S	x		x			x			x			x			x			x	

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20561981		20561988			20561996			20562179			20562187			20562195			20562206
Customer Sample Reference			TPBP140		TPBP140			TPBP140			WSBP101			WSBP101			WSBP102			WSBP102
AGS Reference																				
Depth (m)			0.30 - 0.30		1.00 - 1.00			1.80 - 1.80			0.30 - 0.30			0.50 - 0.50			0.30 - 0.50			0.50 - 0.50
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 52			X						X			X			X			X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
Anions by Kone (soil)	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 66			X			X			X			X			X			X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 8															X			X	
CEN Readings	All	NDPs: 0 Tests: 52			X						X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 118	X		X	X			X		X	X		X	X		X	X		X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 52			X						X			X			X			X	
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 52			X						X			X			X			X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 52			X						X			X			X			X	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 66		X			X			X			X			X			X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 51			X						X			X			X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 52			X						X			X			X			X	

20562471	WSBP107		0.50 - 0.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S		X		X					X				X			X			
				1kg TUB	S	X				X			X	X	X	X			X				X	X
20562463	WSBP107		0.30 - 0.30	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S		X		X					X				X			X			
				1kg TUB	S	X				X			X	X	X	X			X				X	X
20562222	WSBP106		0.50 - 0.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S		X		X					X				X			X			
				1kg TUB	S	X				X	X		X	X	X	X			X				X	X
20562213	WSBP106		0.30 - 0.30	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S		X		X					X				X			X			
				1kg TUB	S	X				X			X	X	X	X			X				X	X
20562278	WSBP103		0.50 - 0.50	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S		X		X					X				X			X			
				1kg TUB	S	X				X			X	X	X	X			X				X	X
20562270	WSBP103		0.30 - 0.30	60g VOC (ALE215)	S																X		
				250g Amber Jar (ALE210)	S		X		X					X				X			X			
				1kg TUB	S	X				X			X	X	X	X			X				X	X
20562206	WSBP102		0.50 - 0.50	60g VOC (ALE215)	S																X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			20561981		20561988			20561996			20562179			20562187			20562195			20562206
Customer Sample Reference			TPBP140		TPBP140			TPBP140			WSBP101			WSBP101			WSBP102			WSBP102
AGS Reference																				
Depth (m)			0.30 - 0.30		1.00 - 1.00			1.80 - 1.80			0.30 - 0.30			0.50 - 0.50			0.30 - 0.50			0.50 - 0.50
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
Sample Type			S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Metals in solid samples by OES	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
PAH by GCMS	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 52			X						X			X			X			X	
pH	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
pH Value	All	NDPs: 0 Tests: 52			X						X			X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
Phenols by HPLC (W)	All	NDPs: 0 Tests: 52			X						X			X			X			X	
Sample description	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
Total Organic Carbon	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
Total Sulphate	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
Total Sulphur	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
TPH CWG (W)	All	NDPs: 0 Tests: 52			X						X			X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 66	X			X			X			X			X			X			X
VOC MS (S)	All	NDPs: 0 Tests: 66		X			X			X			X			X			X		

20562471	WSBP107		0.50 - 0.50	60g VOC (ALE215)	S																x
				250g Amber Jar (ALE210)	S	x	x		x		x		x	x	x	x		x			
				1kg TUB	S			x		x		x					x				
20562463	WSBP107		0.30 - 0.30	60g VOC (ALE215)	S																x
				250g Amber Jar (ALE210)	S	x	x		x		x		x	x	x	x		x			
				1kg TUB	S			x		x		x					x				
20562222	WSBP106		0.50 - 0.50	60g VOC (ALE215)	S																x
				250g Amber Jar (ALE210)	S	x	x		x		x		x	x	x	x		x			
				1kg TUB	S			x		x		x					x				
20562213	WSBP106		0.30 - 0.30	60g VOC (ALE215)	S																x
				250g Amber Jar (ALE210)	S	x	x		x		x		x	x	x	x		x			
				1kg TUB	S			x		x		x					x				
20562278	WSBP103		0.50 - 0.50	60g VOC (ALE215)	S																x
				250g Amber Jar (ALE210)	S	x	x		x		x		x	x	x	x		x			
				1kg TUB	S			x		x		x					x				
20562270	WSBP103		0.30 - 0.30	60g VOC (ALE215)	S																x
				250g Amber Jar (ALE210)	S	x	x		x		x		x	x	x	x		x			
				1kg TUB	S			x		x		x					x				
20562206	WSBP102		0.50 - 0.50	60g VOC (ALE215)	S																x

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
20562126	CPB1	3.30 - 3.30	Dark Brown	Clay Loam	Stones	None
20562134	CPB1	4.00 - 4.00	Dark Brown	Silt Loam	Stones	Oil/Petroleum
20562154	CPB1	5.20 - 5.20	Dark Brown	Clay	Oil/Petroleum	None
20562164	CPB1	8.10 - 8.10	Dark Brown	Silt Loam	Stones	Vegetation
20562171	CPB9	3.50 - 3.50	Dark Brown	Silt Loam	None	None
20562103	CPBR1	3.10 - 3.10	Dark Brown	Sandy Loam	Stones	Vegetation
20562111	CPBR1	5.80 - 5.80	Dark Brown	Silty Clay	Stones	Vegetation
20562119	CPBR1	9.50 - 9.50	Dark Brown	Sand	Stones	None
20562084	CPBR6	3.60 - 3.60	Dark Brown	Silty Clay Loam	Stones	Vegetation
20562092	CPBR6	5.60 - 5.60	Dark Brown	Clay	Stones	None
20561965	TPBP102	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
20562062	TPBP102	1.50 - 1.50	Dark Brown	Sandy Silt Loam	Stones	Oil/Petroleum
20562055	TPBP104	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
20562069	TPBP104	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
20562077	TPBP104	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	Vegetation
20562286	TPBP105	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	Vegetation
20562294	TPBP105	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
20562301	TPBP105	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	Vegetation
20562348	TPBP108	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
20562356	TPBP108	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	Vegetation
20562363	TPBP108	1.50 - 1.50	Dark Brown	Silt Loam	Stones	Vegetation
20562478	TPBP109	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
20562485	TPBP109	0.50 - 0.50	Dark Brown	Loamy Sand	Crushed Brick	Stones
20562493	TPBP109	1.50 - 1.50	Dark Brown	Clay Loam	Stones	Vegetation
20562500	TPBP111	0.30 - 0.30	Light Brown	Sandy Loam	Stones	Vegetation
20562507	TPBP111	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	Vegetation
20562515	TPBP111	1.50 - 1.50	Dark Brown	Silty Clay Loam	Stones	Vegetation
20562005	TPBP112	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
20562013	TPBP112	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Concrete/Aggregate
20562020	TPBP112	1.00 - 1.00	Dark Brown	Loamy Sand	Stones	None
20562027	TPBP113	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	Vegetation
20562035	TPBP113	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Crushed Brick
20562043	TPBP113	1.50 - 1.50	Dark Brown	Sandy Loam	Vegetation	Stones
20562397	TPBP117	0.30 - 0.30	Dark Brown	Sandy Silt Loam	Stones	None
20562406	TPBP117	1.00 - 1.00	Dark Brown	Sandy Loam	Stones	Vegetation
20562414	TPBP117	1.50 - 1.50	Dark Brown	Silt Loam	Stones	Vegetation
20562429	TPBP118	0.30 - 0.30	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
20562448	TPBP118	1.00 - 1.00	Black	N/A	Stones	None

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

			Colour	Description	Inclusions	Inclusions 2
20562455	TPBP118	1.50 - 1.50	Grey	Silty Clay	Vegetation	None
20562230	TPBP128	0.30 - 0.30	Dark Brown	Sandy Silt Loam	Stones	None
20562247	TPBP128	0.50 - 0.50	Dark Brown	Sandy Clay Loam	Stones	Vegetation
20562255	TPBP128	1.00 - 1.00	Dark Brown	Sandy Silt Loam	Stones	None
20562263	TPBP128	1.50 - 1.50	Dark Brown	Silt Loam	Stones	None
20562141	TPBP132	0.20 - 0.20	Dark Brown	Loamy Sand	Stones	None
20562238	TPBP132	0.50 - 0.50	Black	Loamy Sand	Stones	None
20562327	TPBP132	1.20 - 1.20	Dark Brown	Loamy Sand	Stones	None
20562422	TPBP132	2.40 - 2.40	Dark Brown	Sandy Clay Loam	Stones	None
20562310	TPBP133	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
20562318	TPBP133	1.00 - 1.00	Dark Brown	Loamy Sand	Crushed Brick	Stones
20562337	TPBP133	1.50 - 1.50	Dark Brown	Sandy Clay Loam	Stones	Vegetation
20562374	TPBP137	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	None
20562381	TPBP137	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	None
20562389	TPBP137	1.50 - 1.50	Dark Brown	Silt Loam	Stones	Crushed Brick
20561981	TPBP140	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
20561988	TPBP140	1.00 - 1.00	Dark Brown	Stone/Soil	Stones	Crushed Brick
20561996	TPBP140	1.80 - 1.80	Dark Brown	Silt Loam	Stones	None
20562179	WSBP101	0.30 - 0.30	Dark Brown	Loamy Sand	Concrete/Aggregate	Stones
20562187	WSBP101	0.50 - 0.50	Dark Brown	Loamy Sand	Concrete/Aggregate	Stones
20562195	WSBP102	0.30 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
20562206	WSBP102	0.50 - 0.50	Dark Brown	Loamy Sand	Concrete/Aggregate	Stones
20562270	WSBP103	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
20562278	WSBP103	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
20562213	WSBP106	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
20562222	WSBP106	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	None
20562463	WSBP107	0.30 - 0.30	Dark Brown	Loamy Sand	Stones	Vegetation
20562471	WSBP107	0.50 - 0.50	Dark Brown	Sandy Silt Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB1	CPB1	CPB1	CPB1	CPB9	CPBR1
			Depth (m)	3.30 - 3.30	4.00 - 4.00	5.20 - 5.20	8.10 - 8.10	3.50 - 3.50	3.10 - 3.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	15/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562126	20562134	20562154	20562164	20562171	20562103
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		28	58	30	65	30	38
Exchangeable Ammonia as N	<12 mg/kg	TM024		190 M	89.6 M	61.2 M	51.5 M	1140 M	56.8 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0143 M	<0.01 @ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	0.0429 M	<0.01 @ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 @ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 M	<0.035 M	<0.035 M	0.0572 M	<0.035 @ M
Sulphur, Total	<0.02 %	TM132		0.106	3.4	0.255	3.83	0.0384	0.31
Sulphate, Total potential	<0.06 %	TM132		0.318	10.2	0.765	11.5	0.115	0.93
Soil Organic Matter (SOM)	<0.35 %	TM132		4.55 #	26.5 #	2.21 #	40.5 #	2.16 #	7.28 #
pH	1 pH Units	TM133		8.27 M	10.8 M	8.07 M	7.29 M	8.18 M	9.77 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	1.03 M	<1 @ M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 @ M
Arsenic	<0.6 mg/kg	TM181		14.3 M	7.58 M	7.43 M	7.81 M	24.3 M	6.79 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.468 M	<0.02 M	<0.02 M	<0.02 M	0.175 M
Chromium	<0.9 mg/kg	TM181		149 M	91.9 M	21.8 M	9.99 M	32.7 M	45.6 M
Copper	<1.4 mg/kg	TM181		17.5 M	20.8 M	9.64 M	9.52 M	11.8 M	8.88 M
Iron	<1000 mg/kg	TM181		77200 #	48800 #	25600 #	18300 #	40800 #	23000 #
Lead	<0.7 mg/kg	TM181		12.3 M	15.9 M	13.9 M	15.5 M	27.1 M	9.24 M
Manganese	<0.13 mg/kg	TM181		9760 M	6440 M	1090 M	443 M	524 M	4340 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		22.1 M	17.5 M	25.7 M	14.5 M	36.9 M	9.83 M
Selenium	<1 mg/kg	TM181		3.22 #	3.52 #	<1 #	<1 #	<1 #	1.41 #
Vanadium	<0.2 mg/kg	TM181		212 #	125 #	32.8 #	30.7 #	59.9 #	62.4 #
Zinc	<1.9 mg/kg	TM181		71.6 M	83.4 M	82.3 M	81.4 M	121 M	47.3 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.164	0.248	0.0607	0.476	0.0263	0.931
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.147 M	0.671 M	0.154 M	1.49 M	0.0357 M	0.363 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.147 M	0.671 M	0.154 M	1.49 M	0.0357 M	0.363 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR1	CPBR1	CPBR6	CPBR6	TPBP102	TPBP102
			Depth (m)	5.80 - 5.80	9.50 - 9.50	3.60 - 3.60	5.60 - 5.60	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	15/08/2019	14/08/2019	14/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562111	20562119	20562084	20562092	20561965	20562062
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		31	22	54	31	5	7.1
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	35.7 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 M	<0.01 M	<0.01 @ M	0.0108 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 M	<0.01 M	<0.01 @ M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	<0.015 M	<0.015 M	<0.015 @ M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @ M	<0.035 M	<0.035 M	<0.035 @ M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.361	0.101	0.703	0.167	0.475	0.223
Sulphate, Total potential	<0.06 %	TM132		1.08	0.303	2.11	0.501	1.43	0.669
Soil Organic Matter (SOM)	<0.35 %	TM132		2.86 #	4.79 #	9.98 #	1.19 #	2.36 #	3.45 #
pH	1 pH Units	TM133		8.29 M	8.57 M	8.29 M	8.37 M	9.02 M	11.4 M
Cyanide, Total	<1 mg/kg	TM153		<1 @ M	<1 @ M	1.94 M	<1 M	<1 @ M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 @ M	<1 @ M	<1 M	<1 M	<1 @ M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.57 M	4.31 M	9.17 M	6.25 M	44.4 M	13.9 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	0.0912 M	<0.02 M	0.197 M	2.19 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		67.2 M	5 M	38 M	23 M	<9 M	140 M
Copper	<1.4 mg/kg	TM181		7.42 M	3.66 M	27.2 M	10.1 M	<14 M	<14 M
Iron	<1000 mg/kg	TM181		24700 #	7880 #	23800 #	27300 #	179000 #	245000 #
Lead	<0.7 mg/kg	TM181		12.5 M	5.08 M	21.5 M	14.5 M	60.3 M	234 M
Manganese	<0.13 mg/kg	TM181		3020 M	268 M	321 M	656 M	3570 M	15400 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		19.5 M	7.32 M	19.2 M	28.1 M	153 M	23 M
Selenium	<1 mg/kg	TM181		1.01 #	<1 #	1.35 #	<1 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		49.8 #	11.2 #	60.6 #	34 #	119 #	209 #
Zinc	<1.9 mg/kg	TM181		70.3 M	22.4 M	53 M	85.4 M	194 M	206 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.12	0.14	0.125	0.0576	0.761	0.372
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.133 M	0.26 M	0.494 M	0.0881 M	1.44 M	0.241 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.133 M	0.26 M	0.494 M	0.0881 M	1.44 M	0.241 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP104	TPBP104	TPBP104	TPBP105	TPBP105	TPBP105
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562055	20562069	20562077	20562286	20562294	20562301
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.3	18	32	9	7.5	37
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	407 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 M	<0.01 @ M	<0.01 @ M	<0.01 @ M	0.032 @ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 M	<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M
Sulphur, Total	<0.02 %	TM132		0.429	0.85	0.142	0.412	0.41	0.102
Sulphate, Total potential	<0.06 %	TM132		1.29	2.55	0.426	1.24	1.23	0.306
Soil Organic Matter (SOM)	<0.35 %	TM132		<0.35 #	3.6 #	7.03 #	1.03 #	1.22 #	5.19 #
pH	1 pH Units	TM133		11.2 M	11.9 M	7.27 M	8.92 M	11.9 M	11.7 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 @ M	<1 M	1.11 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 @ M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.4 M	7.1 M	13.6 M	14 M	<6 M	14.8 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		156 M	112 M	35.2 M	154 M	615 M	60.3 M
Copper	<1.4 mg/kg	TM181		23.1 M	11.4 M	18.9 M	14.5 M	15.3 M	39.2 M
Iron	<1000 mg/kg	TM181		133000 #	<100000 #	37100 #	55100 #	161000 #	97400 #
Lead	<0.7 mg/kg	TM181		53.2 M	13.1 M	47.1 M	88.3 M	10.8 M	24.1 M
Manganese	<0.13 mg/kg	TM181		15700 M	10900 M	1280 M	705 M	29200 M	4280 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		17.2 M	14.1 M	24.6 M	49.7 M	16.4 M	35.8 M
Selenium	<1 mg/kg	TM181		3.87 #	3.57 #	<1 #	3.35 #	13.3 #	<1 #
Vanadium	<0.2 mg/kg	TM181		301 #	117 #	61.4 #	72.9 #	357 #	79.8 #
Zinc	<1.9 mg/kg	TM181		215 M	98.1 M	126 M	125 M	30.6 M	90.1 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.596	1.18	0.156	0.86	0.653	0.17
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.398 M	0.474 M	0.32 M	0.17 M	0.0351 M	0.223 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.398 M	0.474 M	0.32 M	0.17 M	0.0351 M	0.223 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP108	TPBP108	TPBP108	TPBP109	TPBP109	TPBP109
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	19/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562348	20562356	20562363	20562478	20562485	20562493
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		10	11	38	14	13	31
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	130 M	<12 M	<12 M	188 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	0.0162 @ M	<0.01 @ M	0.0115 @ M	0.0146 @ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	<0.015 @ M	0.0928 @ M	0.104 @ M	0.102 @ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @ M	<0.035 @ M	0.0928 @ M	0.115 @ M	0.117 @ M
Sulphur, Total	<0.02 %	TM132		0.368	0.299	0.902	0.197	0.304	0.104
Sulphate, Total potential	<0.06 %	TM132		1.1	0.897	2.71	0.591	0.912	0.312
Soil Organic Matter (SOM)	<0.35 %	TM132		2.83 #	3.03 #	7.81 #	4.03 #	4.26 #	4.93 #
pH	1 pH Units	TM133		9.49 M	9.96 M	6.63 M	7.68 M	7.62 M	7.23 M
Cyanide, Total	<1 mg/kg	TM153		4.04 M	1.9 M	2.79 M	9.57 M	2.45 M	1.65 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.5 M	14.6 M	15.7 M	46.8 M	11.6 M	12.6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		79.8 M	33.1 M	74.3 M	61 M	31.3 M	31.2 M
Copper	<1.4 mg/kg	TM181		11.8 M	13.5 M	19 M	33.1 M	28.8 M	15.4 M
Iron	<1000 mg/kg	TM181		66200 #	63700 #	41700 #	30000 #	19200 #	26000 #
Lead	<0.7 mg/kg	TM181		27.5 M	34 M	43 M	39.5 M	40.6 M	35.3 M
Manganese	<0.13 mg/kg	TM181		7800 M	5310 M	1260 M	3730 M	1750 M	575 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		10.7 M	11.3 M	23.4 M	20.7 M	21.2 M	24.5 M
Selenium	<1 mg/kg	TM181		2.64 #	1.55 #	<1 #	1.89 #	2.06 #	<1 #
Vanadium	<0.2 mg/kg	TM181		236 #	55.7 #	129 #	111 #	62.5 #	50.9 #
Zinc	<1.9 mg/kg	TM181		124 M	146 M	137 M	139 M	196 M	133 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.468	0.353	0.245	0.327	0.876	0.0525
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.118 M	0.107 M	0.399 M	0.178 M	0.178 M	0.0385 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.118 M	0.107 M	0.399 M	0.178 M	0.178 M	0.0385 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP111	TPBP111	TPBP111	TPBP112	TPBP112	TPBP112
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562500	20562507	20562515	20562005	20562013	20562020
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		9.3	10	25	5.4	7.5	7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	81.9 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	0.0133 @ M	<0.01 @ M	<0.01 @ M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	0.0266 @ M	<0.015 @ M	<0.015 @ M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.119	0.0894	<0.02	0.43	0.669	1.12
Sulphate, Total potential	<0.06 %	TM132		0.357	0.268	0.06	1.29	2.01	3.36
Soil Organic Matter (SOM)	<0.35 %	TM132		1.02 #	2.62 #	4.53 #	1.83 #	1.47 #	0.802 #
pH	1 pH Units	TM133		8.58 M	8.33 M	7.27 M	8.81 M	9.14 M	10.4 M
Cyanide, Total	<1 mg/kg	TM153		<1 @ M	1.11 @ M	3.51 @ M	<1 @ M	<1 @ M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 @ M	<1 @ M	<1 @ M	<1 @ M	<1 @ M	<1 M
Arsenic	<0.6 mg/kg	TM181		10.5 M	7 M	14.2 M	21.9 M	8.44 M	5.29 M
Cadmium	<0.02 mg/kg	TM181		4.1 M	0.624 M	0.0473 M	<0.02 M	<0.2 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		28.7 M	22.7 M	16.6 M	18.9 M	57 M	6.19 M
Copper	<1.4 mg/kg	TM181		13.4 M	7.78 M	22.1 M	17.2 M	<14 M	2.89 M
Iron	<1000 mg/kg	TM181		23500 #	21000 #	27300 #	123000 #	85400 #	37300 #
Lead	<0.7 mg/kg	TM181		61.1 M	31.6 M	29.3 M	56.9 M	33.9 M	10.9 M
Manganese	<0.13 mg/kg	TM181		1400 M	1520 M	508 M	7950 M	6840 M	3910 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<1.4 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		12.8 M	12.9 M	31.5 M	17.3 M	11 M	5.45 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	1.81 #	<10 #	1.97 #
Vanadium	<0.2 mg/kg	TM181		37.5 #	30.5 #	37.2 #	106 #	99.3 #	59.1 #
Zinc	<1.9 mg/kg	TM181		283 M	83.8 M	111 M	178 M	108 M	54.1 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.32	0.106	0.199	0.607	1.65	4.24
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.125 M	0.126 M	0.69 M	1.03 M	1.59 M	1.38 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.125 M	0.126 M	0.69 M	1.03 M	1.59 M	1.38 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP113	TPBP113	TPBP113	TPBP117	TPBP117	TPBP117
			Depth (m)	0.20 - 0.20	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562027	20562035	20562043	20562397	20562406	20562414
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		6.7	4	8.6	20	18	32
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	124 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.1 @ M	<0.01 @ M	0.0296 @ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.1 @ M	<0.01 @ M	<0.01 @ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.15 @ M	<0.015 @ M	0.0296 @ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M	0.0592 @ M
Sulphur, Total	<0.02 %	TM132		0.249	0.183	0.32	0.217	0.191	0.326
Sulphate, Total potential	<0.06 %	TM132		0.747	0.549	0.96	0.651	0.573	0.978
Soil Organic Matter (SOM)	<0.35 %	TM132		2.67 #	0.479 #	1.11 #	4.31 #	3.86 #	7.72 #
pH	1 pH Units	TM133		12.1 M	11.7 M	11.8 M	8.13 M	7.98 M	7.19 M
Cyanide, Total	<1 mg/kg	TM153		<1 @ M	<1 @ M	<1 @ M	388 M	306 M	305 M
Cyanide, Free	<1 mg/kg	TM153		<1 @ M	<1 @ M	<1 @ M	1.25 M	<1 M	1.02 M
Arsenic	<0.6 mg/kg	TM181		14.4 M	26.9 M	10.5 M	14.6 M	15.6 M	14.8 M
Cadmium	<0.02 mg/kg	TM181		<0.2 M	<0.02 M	<0.2 M	0.246 M	0.401 M	0.105 M
Chromium	<0.9 mg/kg	TM181		231 M	119 M	389 M	39.6 M	46.1 M	49.7 M
Copper	<1.4 mg/kg	TM181		22.4 M	14.7 M	<14 M	111 M	34.4 M	31 M
Iron	<1000 mg/kg	TM181		192000 #	176000 #	243000 #	37600 #	26600 #	24500 #
Lead	<0.7 mg/kg	TM181		125 M	128 M	43.2 M	107 M	86.6 M	70.7 M
Manganese	<0.13 mg/kg	TM181		23400 M	11600 M	18000 M	699 M	1400 M	999 M
Mercury	<0.14 mg/kg	TM181		<1.4 M	<0.14 M	<1.4 M	21 M	6.46 M	12 M
Nickel	<0.2 mg/kg	TM181		40.9 M	47.4 M	6.09 M	39.2 M	22.8 M	32.3 M
Selenium	<1 mg/kg	TM181		<10 #	1.92 #	<10 #	1.5 #	<10 #	1.25 #
Vanadium	<0.2 mg/kg	TM181		245 #	157 #	280 #	31.7 #	41.4 #	54.7 #
Zinc	<1.9 mg/kg	TM181		241 M	379 M	105 M	280 M	179 M	137 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.502	0.21	0.593	0.0719	0.208	0.199
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.1 M	0.0819 M	0.0883 M	0.0628 M	0.335 M	0.121 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.1 M	0.0819 M	0.0883 M	0.0628 M	0.335 M	0.121 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304			<0.001 #		<0.001 #		
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304			<0.001 #		<0.001 #		
Additional Asbestos Components (Using TM048)		TM304			None #		None #		
Analysts Comments		TM304			0		N/A		
Asbestos Quantification - Total - %	<0.001 %	TM304			<0.001 #		<0.001 #		

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP118	TPBP118	TPBP118	TPBP128	TPBP128	TPBP128
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	19/08/2019	16/08/2019	16/08/2019	16/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562429	20562448	20562455	20562230	20562247	20562255
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		8.7	10	34	8.7	11	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12	204 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @	<0.035 M	<0.035 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.189	0.228	0.112	0.25	0.109	0.2
Sulphate, Total potential	<0.06 %	TM132		0.567	0.684	0.336	0.75	0.327	0.6
Soil Organic Matter (SOM)	<0.35 %	TM132		3.29 #	6.26	6.03 #	2.91 #	3.65 #	4.03 #
pH	1 pH Units	TM133		9.17 M	6.84	7.49 M	8.89 M	9.18 M	8.59 M
Cyanide, Total	<1 mg/kg	TM153		1.46 M	<1	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		16.4 M	8.75	14.8 M	13 M	11.7 M	16.4 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02	0.119 M	0.198 M	0.231 M	0.0409 M
Chromium	<0.9 mg/kg	TM181		34.6 M	8.82	29.1 M	35.2 M	53.5 M	86.8 M
Copper	<1.4 mg/kg	TM181		25.3 M	20.1	18.6 M	14.7 M	13.2 M	15.8 M
Iron	<1000 mg/kg	TM181		43200 #	25400	30200 #	52800 #	36800 #	59000 #
Lead	<0.7 mg/kg	TM181		30.9 M	20.5	34.3 M	84.9 M	71.4 M	81 M
Manganese	<0.13 mg/kg	TM181		3010 M	573	404 M	2740 M	2160 M	4240 M
Mercury	<0.14 mg/kg	TM181		3.29 M	<0.14	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		18.4 M	21	33.3 M	17.3 M	24.1 M	42.5 M
Selenium	<1 mg/kg	TM181		<1 #	<1	<1 #	<1 #	<1 #	1.28 #
Vanadium	<0.2 mg/kg	TM181		75.9 #	23.3	49.2 #	59.6 #	56 #	146 #
Zinc	<1.9 mg/kg	TM181		140 M	41.1	150 M	292 M	259 M	278 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.273	0.0748	0.0519	0.317	0.131	0.26
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.152 M	0.0381	0.0431 M	0.439 M	0.11 M	0.285 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.152 M	0.0381	0.0431 M	0.439 M	0.11 M	0.285 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304							<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304							<0.001 #
Additional Asbestos Components (Using TM048)		TM304							None #
Analysts Comments		TM304							0
Asbestos Quantification - Total - %	<0.001 %	TM304							<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP128	TPBP132	TPBP132	TPBP132	TPBP132	TPBP133
			Depth (m)	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.20 - 1.20	2.40 - 2.40	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562263	20562141	20562238	20562327	20562422	20562310
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		27	12	9.7	10	38	15
Exchangeable Ammonia as N	<12 mg/kg	TM024		58.3 M	<12 M	<12 M	<12 M	315 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 @ M	0.0111 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M	<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M
Sulphur, Total	<0.02 %	TM132		0.146	0.811	0.557	0.808	0.0892	0.279
Sulphate, Total potential	<0.06 %	TM132		0.438	2.43	1.67	2.42	0.268	0.837
Soil Organic Matter (SOM)	<0.35 %	TM132		4.19 #	4.28 #	4.38 #	2.76 #	6.71 #	9.9 #
pH	1 pH Units	TM133		8.58 M	12.6 M	11.7 M	12.1 M	7.25 M	9.81 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 @ M	<1 M	<1 @ M	<1 @ M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 @ M	<1 M	<1 @ M	<1 @ M	<1 M
Arsenic	<0.6 mg/kg	TM181		11.4 M	7.41 M	11.9 M	<6 M	13.6 M	11 M
Cadmium	<0.02 mg/kg	TM181		0.041 M	<0.02 M	<0.2 M	0.897 M	0.0629 M	0.128 M
Chromium	<0.9 mg/kg	TM181		26.5 M	193 M	205 M	323 M	35.3 M	77.2 M
Copper	<1.4 mg/kg	TM181		15.6 M	15.2 M	20.5 M	<14 M	18 M	17 M
Iron	<1000 mg/kg	TM181		30600 #	112000 #	161000 #	110000 #	31600 #	63000 #
Lead	<0.7 mg/kg	TM181		41.2 M	25 M	42 M	20.8 M	57.7 M	102 M
Manganese	<0.13 mg/kg	TM181		897 M	17800 M	16600 M	19600 M	543 M	694 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		28.1 M	12.4 M	22 M	9.08 M	25.2 M	16.3 M
Selenium	<1 mg/kg	TM181		<1 #	5.33 #	<10 #	<10 #	<1 #	2.15 #
Vanadium	<0.2 mg/kg	TM181		44.9 #	263 #	215 #	359 #	58.4 #	99.5 #
Zinc	<1.9 mg/kg	TM181		148 M	115 M	77.6 M	57.3 M	168 M	93.9 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.0899	1.01	1.03	0.9	0.102	0.313
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.128 M	0.443 M	0.537 M	0.679 M	0.375 M	0.18 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.128 M	0.443 M	0.537 M	0.679 M	0.375 M	0.18 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304				<0.001 #			
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304				<0.001 #			
Additional Asbestos Components (Using TM048)		TM304				None #			
Analysts Comments		TM304				0			
Asbestos Quantification - Total - %	<0.001 %	TM304				<0.001 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP133	TPBP133	TPBP137	TPBP137	TPBP137	TPBP140
			Depth (m)	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	19/08/2019	19/08/2019	19/08/2019	15/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562318	20562337	20562374	20562381	20562389	20561981
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		11	27	5.2	7.6	23	9.7
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	19.3 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	0.0685 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M	<0.01 @ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M	<0.015 @ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	0.0685 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M	<0.035 @ M
Sulphur, Total	<0.02 %	TM132		0.289	0.0452	0.0317	0.115	0.964	0.22
Sulphate, Total potential	<0.06 %	TM132		0.867	0.136	0.0951	0.345	2.89	0.66
Soil Organic Matter (SOM)	<0.35 %	TM132		5.07 #	0.824 #	0.95 #	1.98 #	4.53 #	3.24 #
pH	1 pH Units	TM133		9.1 M	11.4 M	9.32 M	9.08 M	6.38 M	9.05 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	11.7 M	<1 @ M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 @ M
Arsenic	<0.6 mg/kg	TM181		10.1 M	13.8 M	6.29 M	13.1 M	29.5 M	8.18 M
Cadmium	<0.02 mg/kg	TM181		0.433 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M	<0.02 M
Chromium	<0.9 mg/kg	TM181		47.3 M	24.6 M	5.32 M	24.2 M	37.8 M	28.6 M
Copper	<1.4 mg/kg	TM181		18.5 M	7.73 M	2.72 M	17.9 M	17 M	8.89 M
Iron	<1000 mg/kg	TM181		58200 #	33000 #	52400 #	81600 #	61700 #	82100 #
Lead	<0.7 mg/kg	TM181		106 M	19.4 M	9.7 M	20.2 M	14.9 M	17.9 M
Manganese	<0.13 mg/kg	TM181		4860 M	1340 M	919 M	3230 M	4190 M	3170 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		16.9 M	27.5 M	5.78 M	23.7 M	20.5 M	11.1 M
Selenium	<1 mg/kg	TM181		1.73 #	<1 #	<1 #	<1 #	1.69 #	<1 #
Vanadium	<0.2 mg/kg	TM181		84.6 #	42 #	15.6 #	56.7 #	118 #	51.7 #
Zinc	<1.9 mg/kg	TM181		472 M	83.7 M	55.5 M	95.4 M	72.9 M	74.4 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.265	0.0284	0.0253	0.133	1.8	0.483
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.165 M	0.0409 M	0.0206 M	0.0599 M	0.32 M	0.209 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.165 M	0.0409 M	0.0206 M	0.0599 M	0.32 M	0.209 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001 #					
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001 #					
Additional Asbestos Components (Using TM048)		TM304		None #					
Analysts Comments		TM304		0					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001 #					

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP140	TPBP140	WSBP101	WSBP101	WSBP102	WSBP102
			Depth (m)	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	0.50 - 0.50	0.30 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20561988	20561996	20562179	20562187	20562195	20562206
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		13	24	4.2	4	9.6	11
Exchangeable Ammonia as N	<12 mg/kg	TM024		26.2 M	151 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	0.0313 M	0.0313 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 M	0.0104 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @ M	<0.035 M	0.0417 M	<0.035 M	<0.035 M
Sulphur, Total	<0.02 %	TM132		0.781	0.0312	0.5	0.525	0.157	0.191
Sulphate, Total potential	<0.06 %	TM132		2.34	0.0936	1.5	1.58	0.471	0.573
Soil Organic Matter (SOM)	<0.35 %	TM132		3.45 #	2.1 #	2.9 #	2.33 #	5.43 #	10.7 #
pH	1 pH Units	TM133		7.81 M	7.89 M	12.7 M	12.7 M	9.5 M	8.82 M
Cyanide, Total	<1 mg/kg	TM153		<1 @ M	<1 @ M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 @ M	<1 @ M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		9.7 M	15.8 M	<6 M	<6 M	14.3 M	15.9 M
Cadmium	<0.02 mg/kg	TM181		0.298 M	<0.02 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		194 M	35.8 M	438 M	335 M	<9 M	65.1 M
Copper	<1.4 mg/kg	TM181		36.9 M	11.4 M	<14 M	23.5 M	30.4 M	46.6 M
Iron	<1000 mg/kg	TM181		34500 #	36400 #	141000 #	158000 #	232000 #	177000 #
Lead	<0.7 mg/kg	TM181		75.3 M	29.4 M	23.6 M	18.7 M	156 M	243 M
Manganese	<0.13 mg/kg	TM181		6480 M	476 M	23800 M	18100 M	6120 M	6510 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<1.4 M	<1.4 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		19.3 M	38.2 M	7.04 M	18.1 M	17.9 M	26.6 M
Selenium	<1 mg/kg	TM181		3.3 #	<1 #	12.7 #	<10 #	<10 #	<10 #
Vanadium	<0.2 mg/kg	TM181		485 #	62.3 #	562 #	436 #	53.5 #	51.2 #
Zinc	<1.9 mg/kg	TM181		155 M	111 M	103 M	70 M	252 M	390 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.452	<0.02	0.395	0.51	0.165	0.213
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.702 M	0.102 M	0.0226 M	0.0175 M	0.0762 M	0.0743 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.702 M	0.102 M	0.0226 M	0.0175 M	0.0762 M	0.0743 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304						<0.001 #	<0.001 #
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304						<0.001 #	<0.001 #
Additional Asbestos Components (Using TM048)		TM304						None #	None #
Analysts Comments		TM304						0	0
Asbestos Quantification - Total - %	<0.001 %	TM304						<0.001 #	<0.001 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP103	WSBP103	WSBP106	WSBP106	WSBP107	WSBP107
			Depth (m)	0.30 - 0.30	0.50 - 0.50	0.30 - 0.30	0.50 - 0.50	0.30 - 0.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	16/08/2019	16/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562270	20562278	20562213	20562222	20562463	20562471
			AGS Reference						
Moisture Content Ratio (% of as received sample)	%	PM024		7.7	7.1	12	12	12	14
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 M	<0.01 M	<0.01 @ M	<0.01 @ M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M	<0.01 @ M	<0.01 M	<0.01 M	<0.01 @ M	<0.01 @ M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M	<0.015 @ M	<0.015 M	<0.015 M	<0.015 @ M	<0.015 @ M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M	<0.035 @ M	<0.035 M	<0.035 M	<0.035 @ M	<0.035 @ M
Sulphur, Total	<0.02 %	TM132		0.398	0.31	0.214	0.191	0.153	0.106
Sulphate, Total potential	<0.06 %	TM132		1.19	0.93	0.642	0.573	0.459	0.318
Soil Organic Matter (SOM)	<0.35 %	TM132		3.79 #	4.36 #	4.31 #	5.43 #	1.43 #	0.376 #
pH	1 pH Units	TM133		10.4 M	9.46 M	9.45 M	8.77 M	8.83 M	9.31 M
Cyanide, Total	<1 mg/kg	TM153		<1 M	<1 M	2.89 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Arsenic	<0.6 mg/kg	TM181		6.84 M	5.36 M	13.3 M	16.6 M	13.4 M	18.6 M
Cadmium	<0.02 mg/kg	TM181		<0.02 M	<0.02 M	1.87 M	1.49 M	0.109 M	<0.2 M
Chromium	<0.9 mg/kg	TM181		195 M	50.4 M	149 M	19.5 M	18 M	<9 M
Copper	<1.4 mg/kg	TM181		6.94 M	6.47 M	17.4 M	19.3 M	16.5 M	21.2 M
Iron	<1000 mg/kg	TM181		93900 #	67200 #	143000 #	124000 #	23200 #	429000 #
Lead	<0.7 mg/kg	TM181		14.7 M	9.28 M	327 M	268 M	35.2 M	54.4 M
Manganese	<0.13 mg/kg	TM181		18000 M	7790 M	11000 M	3900 M	1620 M	19700 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<1.4 M	<1.4 M	<0.14 M	<1.4 M
Nickel	<0.2 mg/kg	TM181		6.93 M	6.52 M	24.9 M	23.1 M	15.3 M	<2 M
Selenium	<1 mg/kg	TM181		5.54 #	2.72 #	<10 #	<10 #	<1 #	<10 #
Vanadium	<0.2 mg/kg	TM181		146 #	68.4 #	188 #	85.4 #	25.7 #	<2 #
Zinc	<1.9 mg/kg	TM181		67.8 M	52 M	1030 M	800 M	138 M	80.2 M
Sulphate, acid soluble (total)	<0.02 %	TM221		0.43	0.561	0.182	0.203	0.292	0.0776
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.094 M	0.182 M	0.12 M	0.136 M	0.165 M	0.0786 M
Soluble Sulphate 2:1 extract as SO4 BRE	<0.004 g/l	TM243		0.094 M	0.182 M	0.12 M	0.136 M	0.165 M	0.0786 M
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304					<0.001 #		
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304					<0.001 #		
Additional Asbestos Components (Using TM048)		TM304					None #		
Analysts Comments		TM304					0		
Asbestos Quantification - Total - %	<0.001 %	TM304					<0.001 #		

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB1	CPB1	CPB1	CPB1	CPB9	CPBR1
			Depth (m)	3.30 - 3.30	4.00 - 4.00	5.20 - 5.20	8.10 - 8.10	3.50 - 3.50	3.10 - 3.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	15/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562126	20562134	20562154	20562164	20562171	20562103
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		84.6	89.9	93.4	88.8	52.2	91.2
Acenaphthene-d10 % recovery**	%	TM218		85.3	90.1	89.5	88.8	63.6	86
Phenanthrene-d10 % recovery**	%	TM218		86.1	88.8	86.9	84.9	71.4	84.3
Chrysene-d12 % recovery**	%	TM218		92.2	91.5	89	83.6	78.1	94.5
Perylene-d12 % recovery**	%	TM218		90.4	90.7	91.1	77.8	74	92.7
Naphthalene	<0.009 mg/kg	TM218		0.0182 M	0.422 M	<0.009 M	0.624 M	0.458 M	0.0425 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	0.303 M	<0.012 M	0.473 M	1.43 M	0.0283 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	0.148 M	<0.008 M	0.1 M	0.55 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.261 M	<0.01 M	0.282 M	2.57 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.0394 M	1.19 M	<0.015 M	1.51 M	9.75 M	0.0722 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	0.384 M	<0.016 M	0.506 M	1.87 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.0781 M	2.53 M	<0.017 M	3.54 M	8.63 M	0.122 M
Pyrene	<0.015 mg/kg	TM218		0.0597 M	1.88 M	<0.015 M	2.72 M	5.49 M	0.0992 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0363 M	1.05 M	<0.014 M	1.58 M	2.55 M	0.0527 M
Chrysene	<0.01 mg/kg	TM218		0.033 M	0.99 M	<0.01 M	1.34 M	1.69 M	0.056 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0554 M	1.62 M	<0.015 M	2.31 M	2.16 M	0.0927 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0204 M	0.591 M	<0.014 M	0.831 M	0.772 M	0.0335 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0299 M	0.877 M	<0.015 M	1.28 M	1.83 M	0.0545 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0269 M	0.738 M	<0.018 M	1.23 M	1.4 M	0.0521 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.126 M	<0.023 M	0.193 M	0.204 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.78 M	<0.024 M	1.06 M	1.22 M	0.0553 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.397	13.9	<0.118	19.6	42.6	0.761

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR1	CPBR1	CPBR6	CPBR6	TPBP102	TPBP102
			Depth (m)	5.80 - 5.80	9.50 - 9.50	3.60 - 3.60	5.60 - 5.60	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	15/08/2019	14/08/2019	14/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562111	20562119	20562084	20562092	20561965	20562062
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		95.7	93.8	91.4	97.5	90.5	81.4
Acenaphthene-d10 % recovery**	%	TM218		96.4	96.4	89.6	93.7	87.3	82.7
Phenanthrene-d10 % recovery**	%	TM218		93.8	96.2	87.1	95.1	103	83.5
Chrysene-d12 % recovery**	%	TM218		93.9	88.5	85.9	97.3	94	81.9
Perylene-d12 % recovery**	%	TM218		92	80	86.7	91	75	78.7
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	0.0992 M	<0.009 M	0.463 @ M	0.247 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	0.0468 M	<0.012 M	0.0829 @ M	0.0587 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	<0.008 M	0.148 @ M	0.0774 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.0367 M	<0.01 M	0.0802 @ M	0.0803 M
Phenanthrene	<0.015 mg/kg	TM218		0.0511 M	0.0325 M	0.238 M	0.0252 M	1.09 @ M	0.656 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.0707 M	<0.016 M	0.202 @ M	0.129 M
Fluoranthene	<0.017 mg/kg	TM218		0.168 M	0.066 M	0.492 M	0.0323 M	1.25 @ M	1.03 M
Pyrene	<0.015 mg/kg	TM218		0.121 M	0.0546 M	0.332 M	0.0218 M	1.05 @ M	0.768 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.071 M	0.028 M	0.199 M	<0.014 M	0.526 @ M	0.539 M
Chrysene	<0.01 mg/kg	TM218		0.0462 M	0.0246 M	0.207 M	<0.01 M	0.488 @ M	0.52 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0748 M	0.0358 M	0.323 M	<0.015 M	0.623 @ M	0.632 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0261 M	<0.014 M	0.117 M	<0.014 M	0.206 @ M	0.3 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0535 M	0.0223 M	0.184 M	<0.015 M	0.448 @ M	0.495 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0517 M	<0.018 M	0.167 M	<0.018 M	0.361 @ M	0.356 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.115 @ M	0.0652 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0406 M	<0.024 M	0.159 M	<0.024 M	0.328 @ M	0.386 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.705	0.264	2.67	<0.118	7.34	6.34

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP104	TPBP104	TPBP104	TPBP105	TPBP105	TPBP105
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562055	20562069	20562077	20562286	20562294	20562301
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.1	88.3	93.8	89.9	89.8	91.4
Acenaphthene-d10 % recovery**	%	TM218		95.1	88.8	94.5	93.8	92.1	93
Phenanthrene-d10 % recovery**	%	TM218		104	83.3	98.4	95.1	95.3	95.5
Chrysene-d12 % recovery**	%	TM218		108	83.7	101	92.7	89.3	100
Perylene-d12 % recovery**	%	TM218		104	84.4	95.5	83.8	85.5	91.9
Naphthalene	<0.009 mg/kg	TM218		0.25 M	1.23 M	4.52 M	0.126 M	1.43 M	0.844 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0867 M	0.147 M	<0.012 M	0.0457 M	0.0214 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.04 M	0.47 M	0.0477 M	0.0142 M	0.114 M	0.0597 M
Fluorene	<0.01 mg/kg	TM218		<0.05 M	0.166 M	0.0151 M	0.0137 M	0.0397 M	0.0201 M
Phenanthrene	<0.015 mg/kg	TM218		0.686 M	1.96 M	0.0576 M	0.204 M	0.6 M	0.0457 M
Anthracene	<0.016 mg/kg	TM218		0.168 M	0.347 M	<0.016 M	0.0439 M	0.0931 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		1.34 M	2.18 M	0.153 M	0.512 M	2.21 M	0.123 M
Pyrene	<0.015 mg/kg	TM218		1.27 M	2 M	0.138 M	0.432 M	2.38 M	0.128 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.717 M	0.933 M	0.0766 M	0.317 M	1.99 M	0.0826 M
Chrysene	<0.01 mg/kg	TM218		0.681 M	1.09 M	0.0685 M	0.354 M	2.09 M	0.0776 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.932 M	1.65 M	0.1 M	0.629 M	3.43 M	0.139 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.351 M	0.626 M	0.0271 M	0.232 M	1.32 M	0.0549 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.695 M	0.847 M	0.0624 M	0.356 M	2.29 M	0.0788 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.679 M	0.684 M	0.0521 M	0.349 M	1.96 M	0.0687 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.115 M	<0.23 M	<0.023 M	0.0614 M	0.37 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.656 M	0.769 M	0.0507 M	0.31 M	1.84 M	0.0665 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		8.51	15.1	5.37	4	22.2	1.79

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP108	TPBP108	TPBP108	TPBP109	TPBP109	TPBP109
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	19/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562348	20562356	20562363	20562478	20562485	20562493
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		89.2	88.9	90.7	37.8	94.7	91.5
Acenaphthene-d10 % recovery**	%	TM218		86.5	85.9	89.6	51.5	109	92.9
Phenanthrene-d10 % recovery**	%	TM218		87.3	84.9	93.4	49.4	110	95.1
Chrysene-d12 % recovery**	%	TM218		86.7	82.7	97	48.5	115	83.3
Perylene-d12 % recovery**	%	TM218		88.9	86.4	81.6	43.2	101	81.1
Naphthalene	<0.009 mg/kg	TM218		1.01 M	1.3 M	1.54 M	64.7 @ M	50.1 @ M	7.19 @ M
Acenaphthylene	<0.012 mg/kg	TM218		0.0547 M	0.0697 M	0.0268 M	2.88 @ M	0.923 @ M	<0.012 @ M
Acenaphthene	<0.008 mg/kg	TM218		0.00946 M	0.0117 M	0.07 M	8.93 @ M	4.46 @ M	0.519 @ M
Fluorene	<0.01 mg/kg	TM218		0.0278 M	0.0302 M	0.0528 M	3.49 @ M	1.43 @ M	0.222 @ M
Phenanthrene	<0.015 mg/kg	TM218		0.0875 M	0.0995 M	0.135 M	3.15 @ M	1.47 @ M	0.189 @ M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.0552 M	0.492 @ M	0.163 @ M	<0.016 @ M
Fluoranthene	<0.017 mg/kg	TM218		0.156 M	0.157 M	0.266 M	0.552 @ M	0.265 @ M	0.0711 @ M
Pyrene	<0.015 mg/kg	TM218		0.125 M	0.126 M	0.204 M	0.579 @ M	0.304 @ M	0.0732 @ M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.101 M	0.113 M	0.119 M	0.182 @ M	0.0634 @ M	0.0207 @ M
Chrysene	<0.01 mg/kg	TM218		0.102 M	0.137 M	0.13 M	0.48 @ M	0.1 @ M	0.0271 @ M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.297 M	0.308 M	0.104 M	0.211 @ M	0.0577 @ M	0.0288 @ M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0775 M	0.0863 M	0.0509 M	0.0444 @ M	<0.014 @ M	<0.014 @ M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.091 M	0.0896 M	0.0942 M	0.081 @ M	0.0259 @ M	<0.015 @ M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.156 M	0.175 M	0.0879 M	0.0785 @ M	<0.018 @ M	<0.018 @ M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 @ M	<0.023 @ M	<0.023 @ M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.127 M	0.131 M	0.0872 M	0.0911 @ M	0.0357 @ M	<0.024 @ M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		2.42	2.83	3.03	85.9	59.4	8.34

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

PAH by GCMS

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP111	TPBP111	TPBP111	TPBP112	TPBP112	TPBP112
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562500	20562507	20562515	20562005	20562013	20562020
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.7	92.9	97.3	91	89.9	83.4
Acenaphthene-d10 % recovery**	%	TM218		90.4	92.9	90.5	89.1	91.6	87.3
Phenanthrene-d10 % recovery**	%	TM218		96	99.8	98.9	102	106	89.8
Chrysene-d12 % recovery**	%	TM218		91.5	93.5	102	110	119	75.1
Perylene-d12 % recovery**	%	TM218		79.7	82.9	91.7	106	114	73.3
Naphthalene	<0.009 mg/kg	TM218		0.557 @ M	0.435 @ M	7.56 M	0.443 M	0.344 M	0.849 M
Acenaphthylene	<0.012 mg/kg	TM218		0.024 @ M	0.029 @ M	0.0316 M	0.0928 M	<0.12 M	0.056 M
Acenaphthene	<0.008 mg/kg	TM218		0.0312 @ M	0.154 @ M	0.111 M	0.112 M	0.533 M	0.949 M
Fluorene	<0.01 mg/kg	TM218		0.0248 @ M	0.162 @ M	0.0815 M	0.0773 M	0.176 M	0.544 M
Phenanthrene	<0.015 mg/kg	TM218		0.347 @ M	2.23 @ M	0.0853 M	0.518 M	0.582 M	1.21 M
Anthracene	<0.016 mg/kg	TM218		0.0861 @ M	0.475 @ M	<0.016 M	0.18 M	<0.16 M	0.209 M
Fluoranthene	<0.017 mg/kg	TM218		1.27 @ M	3.33 @ M	0.184 M	0.859 M	0.599 M	0.802 M
Pyrene	<0.015 mg/kg	TM218		1.04 @ M	2.43 @ M	0.157 M	0.715 M	0.481 M	0.567 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.609 @ M	1.19 @ M	0.0846 M	0.435 M	0.264 M	0.221 M
Chrysene	<0.01 mg/kg	TM218		0.507 @ M	1 @ M	0.0833 M	0.5 M	0.275 M	0.232 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.687 @ M	1.01 @ M	0.12 M	0.612 M	0.392 M	0.226 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.267 @ M	0.423 @ M	0.0473 M	0.184 M	<0.14 M	0.0848 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.53 @ M	0.812 @ M	0.0823 M	0.401 M	0.22 M	0.173 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.506 @ M	0.709 @ M	0.0856 M	0.421 M	0.212 M	0.143 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0801 @ M	0.116 @ M	<0.023 M	<0.115 M	<0.23 M	0.0264 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.46 @ M	0.589 @ M	0.0793 M	0.423 M	<0.24 M	0.158 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		7.03	15.1	8.8	5.97	4.08	6.45

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP113	TPBP113	TPBP113	TPBP117	TPBP117	TPBP117
			Depth (m)	0.20 - 0.20	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562027	20562035	20562043	20562397	20562406	20562414
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		91.5	93.4	95.3	83.2	72.5	89.1
Acenaphthene-d10 % recovery**	%	TM218		95.3	95.9	101	85.2	84.4	96.8
Phenanthrene-d10 % recovery**	%	TM218		97.5	95.9	103	90.2	86.5	106
Chrysene-d12 % recovery**	%	TM218		92	91.8	104	82.8	79.2	98.8
Perylene-d12 % recovery**	%	TM218		89.7	88.6	103	71.1	78.2	84.7
Naphthalene	<0.009 mg/kg	TM218		2.32 M	0.478 M	9.08 M	3.7 M	64.6 M	23.7 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0954 M	0.185 M	0.0762 M	0.252 M	0.54 M	0.309 M
Acenaphthene	<0.008 mg/kg	TM218		0.46 M	0.024 M	0.78 M	0.369 M	7.83 M	2.85 M
Fluorene	<0.01 mg/kg	TM218		0.275 M	0.122 M	0.573 M	0.134 M	1.46 M	0.619 M
Phenanthrene	<0.015 mg/kg	TM218		1.24 M	1.04 M	1.57 M	0.388 M	4.5 M	0.684 M
Anthracene	<0.016 mg/kg	TM218		0.264 M	0.266 M	0.328 M	0.12 M	0.855 M	0.156 M
Fluoranthene	<0.017 mg/kg	TM218		1.71 M	1.65 M	0.843 M	1.38 M	5.33 M	1.75 M
Pyrene	<0.015 mg/kg	TM218		1.47 M	1.24 M	0.598 M	1.18 M	3.84 M	1.52 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.719 M	0.753 M	0.198 M	0.697 M	1.85 M	0.781 M
Chrysene	<0.01 mg/kg	TM218		0.687 M	0.724 M	0.181 M	0.633 M	1.45 M	0.775 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.05 M	1.06 M	0.209 M	1.26 M	1.99 M	1.23 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.297 M	0.372 M	0.0618 M	0.411 M	0.653 M	0.449 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.502 M	0.626 M	0.126 M	0.76 M	1.34 M	0.882 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.53 M	0.586 M	0.0861 M	1.04 M	1.3 M	1.13 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.118 M	0.123 M	<0.023 M	0.142 M	0.235 M	0.165 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.55 M	0.545 M	0.0914 M	0.891 M	1.09 M	0.963 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		12.3	9.79	14.8	13.4	98.8	38

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP118	TPBP118	TPBP118	TPBP128	TPBP128	TPBP128
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	19/08/2019	16/08/2019	16/08/2019	16/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562429	20562448	20562455	20562230	20562247	20562255
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		94.1	107	84.5	92.2	97.6	90.2
Acenaphthene-d10 % recovery**	%	TM218		91.7	107	77.7	88.2	92.5	88.4
Phenanthrene-d10 % recovery**	%	TM218		92.9	111	89.8	86.8	92.9	86.3
Chrysene-d12 % recovery**	%	TM218		88.1	106	89.4	85.7	91.6	88.5
Perylene-d12 % recovery**	%	TM218		76.3	88.6	78.2	78.3	82.8	85.2
Naphthalene	<0.009 mg/kg	TM218		0.394 M	1.39 @ #	1.4 M	0.427 M	0.2 M	0.144 M
Acenaphthylene	<0.012 mg/kg	TM218		0.114 M	0.0273 @ #	<0.012 M	0.332 M	0.117 M	0.077 M
Acenaphthene	<0.008 mg/kg	TM218		0.0278 M	0.126 @ #	<0.008 M	0.069 M	0.0285 M	0.0151 M
Fluorene	<0.01 mg/kg	TM218		0.0532 M	0.189 @ #	0.0179 M	0.27 M	0.0674 M	0.0396 M
Phenanthrene	<0.015 mg/kg	TM218		0.436 M	1.01 @ #	0.0333 M	2.63 M	0.523 M	0.368 M
Anthracene	<0.016 mg/kg	TM218		0.131 M	0.297 @ #	<0.016 M	0.851 M	0.179 M	0.109 M
Fluoranthene	<0.017 mg/kg	TM218		1.02 M	0.893 @ #	0.061 M	4.63 M	1 M	0.668 M
Pyrene	<0.015 mg/kg	TM218		0.783 M	0.651 @ #	0.0485 M	3.26 M	0.768 M	0.511 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.562 M	0.12 @ #	<0.014 M	2.15 M	0.534 M	0.354 M
Chrysene	<0.01 mg/kg	TM218		0.565 M	0.0961 @ #	0.016 M	1.97 M	0.583 M	0.333 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.729 M	0.082 @ #	0.0259 M	2.87 M	0.699 M	0.536 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.238 M	0.029 @ #	<0.014 M	1.01 M	0.237 M	0.187 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.49 M	0.0454 @ #	<0.015 M	1.7 M	0.41 M	0.29 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.496 M	0.0289 @ #	<0.018 M	1.36 M	0.312 M	0.232 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0796 M	<0.023 @ #	<0.023 M	0.252 M	0.0735 M	0.0441 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.462 M	0.0329 @ #	<0.024 M	1.26 M	0.305 M	0.226 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		6.58	5.02	1.61	25	6.04	4.13

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP128	TPBP132	TPBP132	TPBP132	TPBP132	TPBP133
			Depth (m)	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.20 - 1.20	2.40 - 2.40	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562263	20562141	20562238	20562327	20562422	20562310
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.2	90.6	98	90.5	97.2	80.9
Acenaphthene-d10 % recovery**	%	TM218		89.9	92	95.3	89.7	103	83.6
Phenanthrene-d10 % recovery**	%	TM218		87.9	94	94.7	101	98.8	85.3
Chrysene-d12 % recovery**	%	TM218		88.2	87.1	91.9	93.5	96.6	77.8
Perylene-d12 % recovery**	%	TM218		82	85.7	85.8	77.3	90.4	78.6
Naphthalene	<0.009 mg/kg	TM218		0.0588 M	1.35 @ M	1.28 M	1.2 @ M	1.6 M	0.11 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0206 M	<0.06 @ M	0.0832 M	<0.06 @ M	2.14 M	0.039 M
Acenaphthene	<0.008 mg/kg	TM218		0.0137 M	1.61 @ M	0.992 M	0.958 @ M	0.868 M	0.0594 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	0.747 @ M	0.554 M	0.557 @ M	1.97 M	0.0478 M
Phenanthrene	<0.015 mg/kg	TM218		0.145 M	8.05 @ M	3.88 M	4.58 @ M	6.95 M	0.552 M
Anthracene	<0.016 mg/kg	TM218		0.0351 M	1.86 @ M	0.688 M	0.938 @ M	1.05 M	0.14 M
Fluoranthene	<0.017 mg/kg	TM218		0.21 M	8.85 @ M	3.82 M	4.73 @ M	2.34 M	1.2 M
Pyrene	<0.015 mg/kg	TM218		0.175 M	7.51 @ M	3.02 M	3.87 @ M	1.4 M	1.11 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.109 M	4.29 @ M	1.77 M	2.05 @ M	0.375 M	0.785 M
Chrysene	<0.01 mg/kg	TM218		0.115 M	3.84 @ M	1.91 M	1.9 @ M	0.344 M	0.804 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.181 M	5.28 @ M	2.51 M	1.84 @ M	0.481 M	1.37 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.0689 M	2.23 @ M	0.938 M	0.845 @ M	0.186 M	0.491 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.0934 M	4.04 @ M	1.75 M	1.71 @ M	0.318 M	0.938 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.0822 M	2.47 @ M	1.2 M	1.37 @ M	0.221 M	0.832 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	0.482 @ M	0.231 M	0.232 @ M	0.0418 M	0.108 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.0814 M	2.63 @ M	1.29 M	1.23 @ M	0.208 M	0.72 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		1.39	55.2	25.9	28	20.5	9.3

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP133	TPBP133	TPBP137	TPBP137	TPBP137	TPBP140
			Depth (m)	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	19/08/2019	19/08/2019	19/08/2019	15/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562318	20562337	20562374	20562381	20562389	20561981
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		92.1	91.7	97.6	94.7	79.5	90.3
Acenaphthene-d10 % recovery**	%	TM218		93.5	94.4	95.4	91.8	82	90.5
Phenanthrene-d10 % recovery**	%	TM218		96.8	95.1	98	92.4	84.6	95.5
Chrysene-d12 % recovery**	%	TM218		89.5	98.2	98.2	90.5	75.3	85.9
Perylene-d12 % recovery**	%	TM218		82.7	89	84.9	74.2	71.1	87.8
Naphthalene	<0.009 mg/kg	TM218		0.455 M	0.0289 M	0.0756 M	0.223 M	1.03 M	0.372 @ M
Acenaphthylene	<0.012 mg/kg	TM218		0.525 M	<0.012 M	0.0458 M	0.0168 M	<0.012 M	0.199 @ M
Acenaphthene	<0.008 mg/kg	TM218		0.0486 M	<0.008 M	<0.008 M	<0.008 M	0.149 M	0.328 @ M
Fluorene	<0.01 mg/kg	TM218		0.491 M	<0.01 M	0.0153 M	<0.01 M	0.031 M	0.395 @ M
Phenanthrene	<0.015 mg/kg	TM218		3.02 M	0.0519 M	0.201 M	0.0949 M	0.0601 M	6.44 @ M
Anthracene	<0.016 mg/kg	TM218		0.641 M	<0.016 M	0.0499 M	0.0193 M	<0.016 M	2.47 @ M
Fluoranthene	<0.017 mg/kg	TM218		3.95 M	0.106 M	0.375 M	0.221 M	0.0878 M	34.8 @ M
Pyrene	<0.015 mg/kg	TM218		2.78 M	0.0861 M	0.277 M	0.191 M	0.0663 M	31.9 @ M
Benz(a)anthracene	<0.014 mg/kg	TM218		1.54 M	0.0555 M	0.185 M	0.123 M	0.0342 M	20.2 @ M
Chrysene	<0.01 mg/kg	TM218		1.22 M	0.0596 M	0.177 M	0.118 M	0.0432 M	19.1 @ M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		2.07 M	0.0938 M	0.199 M	0.185 M	0.0644 M	33.4 @ M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.676 M	0.0319 M	0.0979 M	0.0623 M	0.0211 M	11.6 @ M
Benzo(a)pyrene	<0.015 mg/kg	TM218		1.14 M	0.0451 M	0.166 M	0.114 M	0.0293 M	21.2 @ M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		1.1 M	0.0482 M	0.163 M	0.116 M	0.0343 M	19.4 @ M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.219 M	<0.023 M	0.0288 M	<0.023 M	<0.023 M	3.28 @ M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.94 M	0.0442 M	0.151 M	0.102 M	<0.024 M	16.8 @ M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		20.8	0.652	2.21	1.59	1.65	222

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP140	TPBP140	WSBP101	WSBP101	WSBP102	WSBP102
			Depth (m)	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	0.50 - 0.50	0.30 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20561988	20561996	20562179	20562187	20562195	20562206
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		93.8	88.9	96.5	93.7	91.2	95
Acenaphthene-d10 % recovery**	%	TM218		98.5	90.9	91.9	94.4	87.4	92.4
Phenanthrene-d10 % recovery**	%	TM218		98.7	94.2	89.6	94.2	83.5	92.2
Chrysene-d12 % recovery**	%	TM218		97.3	98.2	93.3	93.6	81.7	83.9
Perylene-d12 % recovery**	%	TM218		88.8	88.2	96.6	92.4	76.9	72.1
Naphthalene	<0.009 mg/kg	TM218		4.38 @ M	0.33 @ M	0.617 M	0.421 M	0.229 M	0.252 M
Acenaphthylene	<0.012 mg/kg	TM218		0.0285 @ M	<0.012 @ M	<0.06 M	<0.06 M	0.0286 M	0.0329 M
Acenaphthene	<0.008 mg/kg	TM218		0.0626 @ M	<0.008 @ M	0.227 M	0.136 M	0.0213 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.638 @ M	<0.01 @ M	0.239 M	0.164 M	0.0332 M	0.0361 M
Phenanthrene	<0.015 mg/kg	TM218		0.395 @ M	0.0453 @ M	1.77 M	1.42 M	0.304 M	0.331 M
Anthracene	<0.016 mg/kg	TM218		0.13 @ M	<0.016 @ M	0.218 M	0.191 M	0.0508 M	0.0426 M
Fluoranthene	<0.017 mg/kg	TM218		1.28 @ M	0.135 @ M	1.47 M	1.36 M	0.307 M	0.257 M
Pyrene	<0.015 mg/kg	TM218		1.12 @ M	0.117 @ M	1.18 M	1.07 M	0.287 M	0.218 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.629 @ M	0.072 @ M	1.11 M	0.781 M	0.215 M	0.15 M
Chrysene	<0.01 mg/kg	TM218		0.626 @ M	0.0598 @ M	1.25 M	0.823 M	0.252 M	0.244 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		1.05 @ M	0.103 @ M	2.65 M	1.33 M	0.449 M	0.32 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.355 @ M	0.0346 @ M	1.05 M	0.539 M	0.185 M	0.103 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.637 @ M	0.0599 @ M	1.7 M	0.951 M	0.233 M	0.143 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.509 @ M	0.0535 @ M	1.04 M	0.746 M	0.271 M	0.167 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.099 @ M	<0.023 @ M	<0.115 M	<0.115 M	0.0416 M	0.0369 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.528 @ M	0.0499 @ M	0.941 M	0.73 M	0.255 M	0.178 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		12.5	1.06	15.5	10.7	3.16	2.51

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP103	WSBP103	WSBP106	WSBP106	WSBP107	WSBP107
			Depth (m)	0.30 - 0.30	0.50 - 0.50	0.30 - 0.30	0.50 - 0.50	0.30 - 0.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	16/08/2019	16/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562270	20562278	20562213	20562222	20562463	20562471
			AGS Reference						
Naphthalene-d8 % recovery**	%	TM218		90.2	78.7	89.9	93.6	94.9	85.6
Acenaphthene-d10 % recovery**	%	TM218		89	77.5	86.6	92.2	86.1	87.6
Phenanthrene-d10 % recovery**	%	TM218		90.3	77.4	85.4	91.6	95.1	90.5
Chrysene-d12 % recovery**	%	TM218		91.8	71.2	87.1	91.8	92.4	82.8
Perylene-d12 % recovery**	%	TM218		96.9	71.7	83.8	87.6	78.6	82.2
Naphthalene	<0.009 mg/kg	TM218		0.0673 M	<0.045 M	0.256 M	0.177 M	0.183 M	0.0495 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.06 M	0.101 M	0.0835 M	0.0457 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		0.0415 M	<0.04 M	0.0488 M	0.0269 M	0.0104 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		0.0262 M	<0.05 M	0.0932 M	0.0519 M	0.0182 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		0.376 M	<0.075 M	0.699 M	0.464 M	0.186 M	0.0479 M
Anthracene	<0.016 mg/kg	TM218		0.0893 M	<0.08 M	0.198 M	0.139 M	0.0364 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.709 M	<0.085 M	1.17 M	0.857 M	0.278 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		0.622 M	<0.075 M	0.862 M	0.633 M	0.215 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.435 M	<0.07 M	0.569 M	0.412 M	0.147 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.443 M	<0.05 M	0.518 M	0.417 M	0.131 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.722 M	<0.075 M	0.878 M	0.65 M	0.234 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		0.216 M	<0.07 M	0.328 M	0.239 M	0.0661 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.394 M	<0.075 M	0.47 M	0.348 M	0.133 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		0.348 M	<0.09 M	0.411 M	0.296 M	0.144 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		0.0469 M	<0.115 M	0.0797 M	0.0561 M	0.0309 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		0.29 M	<0.12 M	0.379 M	0.291 M	0.151 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		4.83	<0.59	7.06	5.14	2.01	<0.118

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB1	CPB1	CPB1	CPB1	CPB9	CPBR1
			Depth (m)	3.30 - 3.30	4.00 - 4.00	5.20 - 5.20	8.10 - 8.10	3.50 - 3.50	3.10 - 3.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	15/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562126	20562134	20562154	20562164	20562171	20562103
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		92.5 @	73.2 @	85.9 @	73	92.5 @	91.2 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 @ M	<0.2 @ M	<0.2 M	0.348 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	0.02 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	0.0586 @	<0.02 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	0.127 @	<0.02 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.98	<0.1	<0.1	4.69	3.19	7.62
Aliphatics >C16-C21	<0.1 mg/kg	TM173		12.5	22.3	1.7	46.4	10.5	27.3
Aliphatics >C21-C35	<0.1 mg/kg	TM173		6.21	17.4	32.8	35.4	17.3	52.9
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	2.79	<0.1	3.3	18.8
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		19.7	39.7	37.3	86.5	34.3	107
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	<0.02 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	0.04 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	0.0844 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	3.59	11.5	1.65
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		5.03	28.8	0.203	33.7	46.1	15.2
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		12.5	30.3	17.2	114	52.8	129
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		1.85	2.03	1.47	25	13.8	33.1
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	4.96	14.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		19.4	61.2	18.9	176	124	179
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		39.1	101	56.2	263	159	285

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR1	CPBR1	CPBR6	CPBR6	TPBP102	TPBP102
			Depth (m)	5.80 - 5.80	9.50 - 9.50	3.60 - 3.60	5.60 - 5.60	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	15/08/2019	14/08/2019	14/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562111	20562119	20562084	20562092	20561965	20562062
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		91 @	107 @	73 @	99.8 @	88.4 @	81.2 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 @ M	<0.1 @ M	<0.2 @ M	0.392 @ M	1.12 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.01 @	<0.02 @	0.021 @	0.0237 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0154 @	<0.02 @	0.0358 @	0.043 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0132 @	<0.02 @	0.0389 @	0.132 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0286 @	<0.02 @	0.163 @	0.462 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	42.7	45.7
Aliphatics >C16-C21	<0.1 mg/kg	TM173		12.3	2.16	4.69	<0.1	171	132
Aliphatics >C21-C35	<0.1 mg/kg	TM173		27.4	0.96	31.1	2.23	699	386
Aliphatics >C35-C44	<0.1 mg/kg	TM173		1.96	<0.1	2.42	<0.1	279	95.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		41.6	3.12	38.2	2.23	1190	659
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.01 @	<0.02 @	<0.02 @	0.0484 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.01 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.01 @	<0.02 @	0.0252 @	0.0882 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0198 @	<0.02 @	0.108 @	0.308 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	0.331	8.53	16.4
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		7.85	<0.1	10.5	1.04	41.2	57.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		56.3	1.87	125	20.9	248	182
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		9.81	<0.1	19.5	6.75	186	82.8
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.62	<0.1	5.35	2.96	83	32.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		74	1.87	155	29	484	338
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		116	4.98	194	31.2	1680	999

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP104	TPBP104	TPBP104	TPBP105	TPBP105	TPBP105
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562055	20562069	20562077	20562286	20562294	20562301
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		76.3 @	90.8 @	110 @	93.6 @	96.1 @	122 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	3.52 @ M	16.6 @ M	0.344 @ M	2.6 @ M	11.6 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0573 @	<0.02 @	<0.02 @	0.0432 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	0.023 @	0.113 @	0.0242 @	0.0627 @	0.0736 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	0.248 @	3.11 @	0.0637 @	0.328 @	0.558 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	1.8 @	6.68 @	0.116 @	1.05 @	6.23 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		3.94	10.1	10.5	1.16	2.12	6.23
Aliphatics >C16-C21	<0.1 mg/kg	TM173		16.3	20.9	16.4	1.67	6.24	6.5
Aliphatics >C21-C35	<0.1 mg/kg	TM173		143	86.9	17.3	14.7	34.7	16.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		86.4	53.8	2.43	2.16	14.5	6.28
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		250	172	46.6	19.6	57.6	35.3
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	0.029 @	0.0691 @	<0.02 @	0.0919 @	0.0592 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	0.0448 @	0.0235 @	<0.02 @	0.137 @	0.0592 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	0.166 @	2.07 @	0.0417 @	0.218 @	0.373 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	1.2 @	4.45 @	0.0769 @	0.696 @	4.15 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.96	1.88	2.98	1.05	1.99	4.33
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		12.5	10.6	9.61	6.42	12.8	4.53
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		107	62.2	80.4	31.7	106	37.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		97.6	49.3	17.6	16.6	48.1	10.5
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		44.8	21.2	3.58	6.49	18.6	3.04
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		219	124	111	55.8	169	56.9
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		469	299	174	75.8	229	104

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP108	TPBP108	TPBP108	TPBP109	TPBP109	TPBP109
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	19/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562348	20562356	20562363	20562478	20562485	20562493
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		85.1 @	82.6 @	87.4 @	74.7 @	74.9 @	94.5 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 @ M	1.04 @ M	13.7 @ M	152 @ M	83.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0356 @	0.0615 @	0.246 @	0.13 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0761 @	0.0986 @	0.734 @	0.359 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.168 @	2.93 @	48.1 @	21.6 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.348 @	4.98 @	40.8 @	27.1 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.344	1.22	1.89	117	170	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		1.62	2.14	2.75	130	219	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		14.2	11.6	16.7	16.4	22.4	3.47
Aliphatics >C35-C44	<0.1 mg/kg	TM173		3.73	1.99	<0.1	0.956	0.956	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		19.8	16.9	21.3	264	412	3.47
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0632 @	0.249 @	3 @	1.57 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	0.0974 @	0.283 @	<0.1 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.113 @	1.95 @	32.1 @	14.4 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.232 @	3.32 @	27.2 @	18.1 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.509	1.59	1.17	105	104	4.9
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		1.54	2.57	3.34	64.1	107	0.269
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		12.6	17.4	60.5	51.5	64.8	16.6
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		8.25	9.78	10.6	5.5	5.75	4.57
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		3.22	3.63	1.76	1.23	1.2	0.918
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		22.9	31.3	75.6	226	281	26.3
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		42.7	48.2	97.9	504	846	113

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP111	TPBP111	TPBP111	TPBP112	TPBP112	TPBP112
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562500	20562507	20562515	20562005	20562013	20562020
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		102 @	98 @	96 @	90 @	97 @	89 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	<0.2 @ M	13.4 @ M	<0.2 @ M	<0.2 @ M	0.401 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0944 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.102 @	<0.02 @	<0.02 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	1.94 @	<0.02 @	<0.02 @	0.0215 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	2.71 @	<0.02 @	0.0454 @	0.166 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.63	1.83	5.01	5.26	6.34	24.5
Aliphatics >C16-C21	<0.1 mg/kg	TM173		2.63	3.32	5.35	19.9	19.6	92.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		11.9	17.3	20.6	225	168	283
Aliphatics >C35-C44	<0.1 mg/kg	TM173		6.29	8.89	8.36	111	80.5	81.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		23.4	31.4	39.3	361	275	481
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	5.36 @	<0.02 @	<0.02 @	0.0506 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.0625 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	1.29 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	1.81 @	<0.02 @	0.0303 @	0.111 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		1.76	1.31	4.87	2.28	2.69	10.6
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		6.14	6.08	7.04	14.8	10.9	34.7
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		29.9	28.6	44.6	189	116	105
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		18.7	16.6	11	135	87.6	53
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.84	6.18	3.69	56	37.3	20.4
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		56.5	52.6	67.5	341	217	204
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		80	84	120	703	492	685

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP113	TPBP113	TPBP113	TPBP117	TPBP117	TPBP117
			Depth (m)	0.20 - 0.20	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562027	20562035	20562043	20562397	20562406	20562414
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		82 @	74 @	112 @	70.6 @	97.4 @	82.3 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		0.757 @ M	0.868 @ M	243 @ M	1.22 @ M	<0.1 @ M	37.5 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.218 @	0.0794 @	<0.01 @	0.121 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	1.25 @	0.058 @	<0.01 @	0.892 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.074 @	0.0761 @	32.1 @	0.218 @	<0.01 @	8.89 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.356 @	0.419 @	112 @	0.37 @	<0.01 @	11.5 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		43	39.1	218	175	25.8	64.5
Aliphatics >C16-C21	<0.1 mg/kg	TM173		99	82	266	169	20	61.4
Aliphatics >C21-C35	<0.1 mg/kg	TM173		433	256	643	84.3	21.3	30.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		116	49.9	61	18.1	2.15	6.93
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		691	427	1190	446	69.2	163
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	0.28 @	0.0693 @	<0.01 @	2.44 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.2 @	0.0353 @	<0.01 @	0.147 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0493 @	0.05 @	21.4 @	0.145 @	<0.01 @	5.93 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.237 @	0.279 @	75 @	0.247 @	<0.01 @	7.64 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		9.73	6.52	59.8	44.6	50.9	41.2
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		29.9	24.2	87.6	92.5	71.4	82.4
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		163	102	161	216	147	158
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		95.7	49.7	35.4	56.6	23.9	38.6
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		36.4	19	11.7	17.6	6.52	12.7
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		298	182	344	409	293	320
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		990	610	1770	857	362	521

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP118	TPBP118	TPBP118	TPBP128	TPBP128	TPBP128
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	19/08/2019	16/08/2019	16/08/2019	16/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562429	20562448	20562455	20562230	20562247	20562255
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		85 @	87.1 @	84.7 @	78 @	71	81
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	5.2 @	6.5 @ M	<0.2 @ M	<0.2 M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	0.0855 @	0.0513 @	<0.02 @	<0.02	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	0.101 @	0.103 @	<0.02 @	<0.02	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	0.483 @	1 @	<0.02 @	<0.02	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.02 @	1.4 @	2.7 @	<0.02 @	<0.02	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		0.116	11.4	<0.1	1.98	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		3.32	23.5	<0.1	8.3	1.97	3.81
Aliphatics >C21-C35	<0.1 mg/kg	TM173		27.4	16.1	3.79	65.7	17.8	21
Aliphatics >C35-C44	<0.1 mg/kg	TM173		11.7	3.34	<0.1	27.3	8.26	7.62
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		42.6	54.4	3.79	103	28	32.4
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	1.84 @	0.187 @	<0.02 @	<0.02	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	0.0266 @	<0.02 @	<0.02 @	<0.02	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	0.322 @	0.666 @	<0.02 @	<0.02	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.02 @	0.937 @	1.8 @	<0.02 @	<0.02	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		0.842	13	<0.1	1.92	<0.1	0.745
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		6.69	46.6	1.56	11.1	4.23	6.29
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		65.9	107	55.7	74	25.5	31.2
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		18.5	4.65	8.22	47.6	14.8	19.2
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		7.76	1.37	1.43	20.2	6.22	7.78
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		92	171	65.5	135	44.5	57.4
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		135	231	75.8	238	72.6	89.8

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP128	TPBP132	TPBP132	TPBP132	TPBP132	TPBP133
			Depth (m)	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.20 - 1.20	2.40 - 2.40	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562263	20562141	20562238	20562327	20562422	20562310
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		88.3 @	89.7 @	93.2 @	83.2 @	75.5 @	84.1 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		3.65 @ M	6.7 @ M	7.86 @ M	5.6 @ M	3.22 @ M	0.329 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.0359 @	0.0249 @	0.0278 @	<0.02 @	0.0274 @	0.0224 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		0.126 @	0.0542 @	0.0644 @	0.0522 @	0.0966 @	0.0342 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.181 @	0.775 @	0.738 @	0.714 @	0.42 @	0.103 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.515 @	2.95 @	3.68 @	2.52 @	1.42 @	0.0271 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		53.8	68.7	62	139	159	1.44
Aliphatics >C16-C21	<0.1 mg/kg	TM173		88	152	128	270	1910	14.7
Aliphatics >C21-C35	<0.1 mg/kg	TM173		549	1430	1090	2170	763	147
Aliphatics >C35-C44	<0.1 mg/kg	TM173		142	621	470	949	93.7	63.5
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		833	2280	1750	3520	2930	227
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		2.33 @	0.324 @	0.316 @	0.108 @	0.0225 @	0.0413 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	0.087 @	0.0844 @	0.0411 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.121 @	0.516 @	0.492 @	0.476 @	0.28 @	0.0684 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.344 @	1.97 @	2.45 @	1.68 @	0.948 @	<0.02 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		12.8	24.9	21.1	29.9	35.6	1.68
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		29	79.8	50.3	86.4	431	14.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		110	355	267	355	277	136
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		40	180	161	211	61	89
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		13.2	64.8	61.8	85.3	23.6	36.9
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		192	640	499	682	805	241
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		1030	2920	2260	4210	3740	468

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP133	TPBP133	TPBP137	TPBP137	TPBP137	TPBP140
			Depth (m)	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	19/08/2019	19/08/2019	19/08/2019	15/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562318	20562337	20562374	20562381	20562389	20561981
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		72.1 @	96.4 @	74.9 @	93.3 @	72.8 @	90 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 @ M	<0.2 @ M	<0.2 @ M	<0.2 @ M	0.849 @ M	1.67 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	<0.02 @	0.0585 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	<0.02 @	0.0689 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		0.0237 @	<0.02 @	<0.02 @	<0.02 @	0.146 @	0.0366 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	<0.02 @	0.247 @	0.932 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		2.66	3.94	<0.1	<0.1	<0.1	21
Aliphatics >C16-C21	<0.1 mg/kg	TM173		25.1	<0.1	<0.1	0.214	<0.1	7.15
Aliphatics >C21-C35	<0.1 mg/kg	TM173		171	4.6	35	13.6	2.91	73.3
Aliphatics >C35-C44	<0.1 mg/kg	TM173		56.6	<0.1	6.39	2.01	<0.1	25.3
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		256	8.54	41.4	15.8	2.91	127
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		0.0147 @	<0.02 @	<0.02 @	<0.02 @	0.0624 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		0.0158 @	<0.02 @	<0.02 @	<0.02 @	0.0975 @	0.0244 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01 @	<0.02 @	<0.02 @	<0.02 @	0.165 @	0.622 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		3.01	1.26	<0.1	<0.1	1.5	9.89
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		17.5	<0.1	0.947	1.02	2.59	133
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		105	3.41	12	7.29	30.6	478
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		63.7	2.59	5.57	3.72	9.9	168
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		27	0.852	1.72	1.61	2.12	57.4
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		190	7.27	18.5	12	44.6	789
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		445	15.8	60	27.8	48.4	917

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP140	TPBP140	WSBP101	WSBP101	WSBP102	WSBP102
			Depth (m)	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	0.50 - 0.50	0.30 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20561988	20561996	20562179	20562187	20562195	20562206
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		103 @	116 @	96	91	72.8 @	75
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		73.9 @ #	5.65 @ M	4.85 M	4.19 M	<0.2 @ M	<0.2 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		0.268 @	0.0409 @	<0.02	<0.02	<0.02 @	<0.02
Aliphatics >C6-C8	<0.01 mg/kg	TM089		2.68 @	0.216 @	0.0418	0.0469	<0.02 @	<0.02
Aliphatics >C8-C10	<0.01 mg/kg	TM089		11.7 @	1.65 @	0.578	0.462	<0.02 @	<0.02
Aliphatics >C10-C12	<0.01 mg/kg	TM089		28.3 @	1.44 @	2.17	1.82	<0.02 @	<0.02
Aliphatics >C12-C16	<0.1 mg/kg	TM173		24.1	<0.1	83	140	3.3	3.44
Aliphatics >C16-C21	<0.1 mg/kg	TM173		36.1	0.87	163	239	19	11.3
Aliphatics >C21-C35	<0.1 mg/kg	TM173		26.9	2.38	515	707	138	103
Aliphatics >C35-C44	<0.1 mg/kg	TM173		5.62	0.713	109	242	24.7	17.4
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		92.7	3.97	869	1330	185	135
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		3.13 @	0.235 @	0.179	0.265	<0.02 @	<0.02
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		1.21 @	0.0224 @	0.0313	0.0573	<0.02 @	<0.02
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		7.78 @	1.1 @	0.385	0.308	<0.02 @	<0.02
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		18.9 @	0.958 @	1.45	1.21	<0.02 @	<0.02
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		22.5	0.882	24.1	16	2.12	1.46
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		51.3	5.48	56.9	41.6	12	7.84
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		65.5	14.7	192	108	87.3	61.5
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		12.9	2.8	97.2	108	35.2	25
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		4.3	<0.1	42.5	52.8	12.7	8.8
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		152	23.9	370	274	137	95.8
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		319	33.5	1240	1610	321	231

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

TPH CWG (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP103	WSBP103	WSBP106	WSBP106	WSBP107	WSBP107
			Depth (m)	0.30 - 0.30	0.50 - 0.50	0.30 - 0.30	0.50 - 0.50	0.30 - 0.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	16/08/2019	16/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562270	20562278	20562213	20562222	20562463	20562471
			AGS Reference						
GRO Surrogate % recovery**	%	TM089		89.6 @	98.4 @	81.6 @	99	79.8 @	99.2 @
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.2 @ M	0.225 @ M	<0.2 @ M	<0.2 M	<0.1 @ M	<0.2 @ M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	<0.01 @	<0.02 @
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	<0.01 @	<0.02 @
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	<0.01 @	0.0316 @
Aliphatics >C10-C12	<0.01 mg/kg	TM089		0.0986 @	0.11 @	<0.02 @	<0.02	<0.01 @	0.0737 @
Aliphatics >C12-C16	<0.1 mg/kg	TM173		7.04	12.3	8.88	<0.1	<0.1	51
Aliphatics >C16-C21	<0.1 mg/kg	TM173		27.2	31.3	71.2	6.96	5.81	47.9
Aliphatics >C21-C35	<0.1 mg/kg	TM173		111	96	608	66.2	17.9	34.5
Aliphatics >C35-C44	<0.1 mg/kg	TM173		37.2	47	87.6	8.95	2.47	3.18
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		182	187	775	82.1	26.2	137
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	<0.01 @	<0.02 @
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	<0.01 @	<0.02 @
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.02 @	<0.02 @	<0.02 @	<0.02	<0.01 @	0.0211 @
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		0.065 @	0.0732 @	<0.02 @	<0.02	<0.01 @	0.0491 @
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		2.23	11.2	1.91	1.27	0.63	11.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		9.81	26	16.4	8.17	2.93	13.5
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		62.6	67.2	106	36.9	17.4	11.3
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		48	71.6	39	13.7	8.2	0.732
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		21.1	33.1	14.4	4.73	3.09	0.146
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		123	176	164	60	29.2	36.6
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		305	363	939	142	55.4	173

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPB1	CPB1	CPB1	CPB1	CPB9	CPBR1
			Depth (m)	3.30 - 3.30	4.00 - 4.00	5.20 - 5.20	8.10 - 8.10	3.50 - 3.50	3.10 - 3.10
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	15/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562126	20562134	20562154	20562164	20562171	20562103
			AGS Reference						
Dibromofluoromethane**	%	TM116		108 @	105 @	107 @	108	104 @	111 @
Toluene-d8**	%	TM116		98 @	94.1 @	93.5 @	92.2	98.8 @	96.4 @
4-Bromofluorobenzene**	%	TM116		93.3 @	79.1 @	75.2 @	87.5	96.8 @	86.1 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	CPBR1	CPBR1	CPBR6	CPBR6	TPBP102	TPBP102
			Depth (m)	5.80 - 5.80	9.50 - 9.50	3.60 - 3.60	5.60 - 5.60	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	15/08/2019	14/08/2019	14/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562111	20562119	20562084	20562092	20561965	20562062
			AGS Reference						
Dibromofluoromethane**	%	TM116		106 @	105 @	105 @	109 @	108 @	110 @
Toluene-d8**	%	TM116		97.8 @	98.7 @	93.7 @	99.4 @	98.2 @	97.4 @
4-Bromofluorobenzene**	%	TM116		86.7 @	97.4 @	78 @	96.1 @	92.8 @	89.1 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP104	TPBP104	TPBP104	TPBP105	TPBP105	TPBP105
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562055	20562069	20562077	20562286	20562294	20562301
			AGS Reference						
Dibromofluoromethane**	%	TM116		101 @	113 @	108 @	110 @	110 @	109 @
Toluene-d8**	%	TM116		94.9 @	98.8 @	94.6 @	101 @	100 @	99.7 @
4-Bromofluorobenzene**	%	TM116		87.9 @	96.6 @	84.2 @	98.8 @	99.7 @	101 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	0.273 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	0.187 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	0.46 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	0.46 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP108	TPBP108	TPBP108	TPBP109	TPBP109	TPBP109
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	19/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562348	20562356	20562363	20562478	20562485	20562493
			AGS Reference						
Dibromofluoromethane**	%	TM116		109 @	110 @	112 @	111 @	114 @	106 @
Toluene-d8**	%	TM116		97.8 @	98.9 @	95.9 @	98.5 @	95.4 @	99.9 @
4-Bromofluorobenzene**	%	TM116		86.3 @	89.5 @	89.8 @	97 @	89.3 @	96.7 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	0.16 @ M	0.417 @ M	1.46 @ M	5.23 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	0.122 @ M	0.34 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	0.253 @ M	1.22 @ M	5.67 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	1.2 @ #	6.94 @ #	18.4 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	0.335 @ M	1.87 @ M	2.04 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	1.54 @	8.81 @	20.5 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	2.33 @	11.8 @	31.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP111	TPBP111	TPBP111	TPBP112	TPBP112	TPBP112
			Depth (m)	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562500	20562507	20562515	20562005	20562013	20562020
			AGS Reference						
Dibromofluoromethane**	%	TM116		107 @	114 @	109 @	100 @	105 @	107 @
Toluene-d8**	%	TM116		99.6 @	98.8 @	98.5 @	99.5 @	99.6 @	97.4 @
4-Bromofluorobenzene**	%	TM116		93.9 @	93.7 @	93.1 @	98.2 @	102 @	96.8 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	1.63 @ M	<0.09 @ M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	0.256 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	0.302 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	0.302 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	2.19 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP113	TPBP113	TPBP113	TPBP117	TPBP117	TPBP117
			Depth (m)	0.20 - 0.20	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	15/08/2019	19/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562027	20562035	20562043	20562397	20562406	20562414
			AGS Reference						
Dibromofluoromethane**	%	TM116		101 @	95.5 @	111 @	107 @	106 @	116 @
Toluene-d8**	%	TM116		97.2 @	97.2 @	95.3 @	95 @	95.3 @	96.1 @
4-Bromofluorobenzene**	%	TM116		95.6 @	92.1 @	94.1 @	82.5 @	89.8 @	91.5 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	0.113 @ M	0.601 @ M	1.52 @ M	3.64 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	0.213 @ M	0.143 @ M	0.11 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	0.455 @ M	<0.04 @ M	0.186 @ M	0.938 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	1.29 @ #	<0.1 @ #	<0.1 @ #	0.929 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	0.291 @ M	<0.1 @ M	<0.1 @ M	1.14 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	1.58 @	<0.2 @	<0.2 @	2.07 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	2.14 @	0.813 @	1.85 @	6.75 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP118	TPBP118	TPBP118	TPBP128	TPBP128	TPBP128
			Depth (m)	0.30 - 0.30	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.00 - 1.00
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	19/08/2019	16/08/2019	16/08/2019	16/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562429	20562448	20562455	20562230	20562247	20562255
			AGS Reference						
Dibromofluoromethane**	%	TM116		109 @	110 @	107 @	102 @	97.7	100
Toluene-d8**	%	TM116		99.4 @	98.3 @	97 @	98.6 @	95.3	97
4-Bromofluorobenzene**	%	TM116		91.7 @	90.2 @	92.5 @	93.3 @	88	93.2
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @	<0.1 @ M	<0.1 @ M	<0.1 M	<0.1 M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	3.07 @	0.159 @ M	<0.09 @ M	<0.09 M	<0.09 M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @	<0.07 @ M	<0.07 @ M	<0.07 M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	0.0617 @	0.093 @ M	<0.04 @ M	<0.04 M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @	<0.1 @ #	<0.1 @ #	<0.1 #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @	<0.1 @ M	<0.1 @ M	<0.1 M	<0.1 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2	<0.2
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	3.13 @	<0.4 @	<0.4 @	<0.4	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP128	TPBP132	TPBP132	TPBP132	TPBP132	TPBP133
			Depth (m)	1.50 - 1.50	0.20 - 0.20	0.50 - 0.50	1.20 - 1.20	2.40 - 2.40	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	16/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562263	20562141	20562238	20562327	20562422	20562310
			AGS Reference						
Dibromofluoromethane**	%	TM116		112 @	114 @	110 @	118 @	111 @	106 @
Toluene-d8**	%	TM116		98 @	94.4 @	96.4 @	93.8 @	97.2 @	96.3 @
4-Bromofluorobenzene**	%	TM116		92.5 @	86.3 @	90.2 @	94.9 @	93 @	84 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		2.44 @ M	0.326 @ M	0.124 @ M	0.139 @ M	<0.09 @ M	0.253 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	0.0793 @ M	<0.07 @ M	<0.07 @ M	<0.07 @ M	0.0865 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	0.0939 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	0.365 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	0.365 @
Sum of BTEX	<0.04 mg/kg	TM116		2.44 @	0.405 @	<0.4 @	<0.4 @	<0.4 @	0.798 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP133	TPBP133	TPBP137	TPBP137	TPBP137	TPBP140
			Depth (m)	1.00 - 1.00	1.50 - 1.50	0.30 - 0.30	0.50 - 0.50	1.50 - 1.50	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	19/08/2019	19/08/2019	19/08/2019	15/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562318	20562337	20562374	20562381	20562389	20561981
			AGS Reference						
Dibromofluoromethane**	%	TM116		108 @	117 @	108 @	110 @	116 @	105 @
Toluene-d8**	%	TM116		93.8 @	99.8 @	99.3 @	98.8 @	97 @	98 @
4-Bromofluorobenzene**	%	TM116		78.2 @	98 @	93.8 @	92.9 @	90.9 @	91.6 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		0.223 @ M	<0.09 @ M	<0.09 @ M	0.193 @ M	0.134 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	0.0814 @ M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		0.0697 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		0.31 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		0.31 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		0.602 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @	<0.4 @

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TPBP140	TPBP140	WSBP101	WSBP101	WSBP102	WSBP102
			Depth (m)	1.00 - 1.00	1.80 - 1.80	0.30 - 0.30	0.50 - 0.50	0.30 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	15/08/2019	15/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20561988	20561996	20562179	20562187	20562195	20562206
			AGS Reference						
Dibromofluoromethane**	%	TM116		109 @	109 @	102	103	101 @	104
Toluene-d8**	%	TM116		98.6 @	99.6 @	92.8	94.3	96 @	96.8
4-Bromofluorobenzene**	%	TM116		95.4 @	96.7 @	94.9	96.9	87.7 @	92.4
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 M	<0.1 M	<0.1 @ M	<0.1 M
Benzene	<0.009 mg/kg	TM116		3.19 @ M	0.295 @ M	0.223 M	0.153 M	<0.09 @ M	<0.09 M
Toluene	<0.007 mg/kg	TM116		0.712 @ M	<0.07 @ M	<0.07 M	<0.07 M	<0.07 @ M	<0.07 M
Ethylbenzene	<0.004 mg/kg	TM116		0.518 @ M	0.248 @ M	<0.04 M	<0.04 M	<0.04 @ M	<0.04 M
p/m-Xylene	<0.01 mg/kg	TM116		1.51 @ #	0.598 @ #	<0.1 #	<0.1 #	<0.1 @ #	<0.1 #
o-Xylene	<0.01 mg/kg	TM116		0.398 @ M	0.173 @ M	<0.1 M	<0.1 M	<0.1 @ M	<0.1 M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		1.91 @	0.771 @	<0.2	<0.2	<0.2 @	<0.2
Sum of BTEX	<0.04 mg/kg	TM116		6.33 @	1.31 @	<0.4	<0.4	<0.4 @	<0.4

Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

VOC MS (S)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WSBP103	WSBP103	WSBP106	WSBP106	WSBP107	WSBP107
			Depth (m)	0.30 - 0.30	0.50 - 0.50	0.30 - 0.30	0.50 - 0.50	0.30 - 0.30	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	19/08/2019	19/08/2019	16/08/2019	16/08/2019	19/08/2019	19/08/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019
			SDG Ref	190821-98	190821-98	190821-98	190821-98	190821-98	190821-98
			Lab Sample No.(s)	20562270	20562278	20562213	20562222	20562463	20562471
			AGS Reference						
Dibromofluoromethane**	%	TM116		117 @	108 @	98.9 @	102	105 @	108 @
Toluene-d8**	%	TM116		97 @	97.4 @	98.8 @	96.9	95.9 @	99.3 @
4-Bromofluorobenzene**	%	TM116		92.7 @	93.4 @	90.5 @	89.5	81.7 @	96.9 @
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 M	<0.1 @ M	<0.1 @ M
Benzene	<0.009 mg/kg	TM116		<0.09 @ M	<0.09 @ M	<0.09 @ M	<0.09 M	<0.09 @ M	<0.09 @ M
Toluene	<0.007 mg/kg	TM116		<0.07 @ M	<0.07 @ M	<0.07 @ M	<0.07 M	<0.07 @ M	<0.07 @ M
Ethylbenzene	<0.004 mg/kg	TM116		<0.04 @ M	<0.04 @ M	<0.04 @ M	<0.04 M	<0.04 @ M	<0.04 @ M
p/m-Xylene	<0.01 mg/kg	TM116		<0.1 @ #	<0.1 @ #	<0.1 @ #	<0.1 #	<0.1 @ #	<0.1 @ #
o-Xylene	<0.01 mg/kg	TM116		<0.1 @ M	<0.1 @ M	<0.1 @ M	<0.1 M	<0.1 @ M	<0.1 @ M
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.2 @	<0.2 @	<0.2 @	<0.2	<0.2 @	<0.2 @
Sum of BTEX	<0.04 mg/kg	TM116		<0.4 @	<0.4 @	<0.4 @	<0.4	<0.4 @	<0.4 @

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB1 3.30 - 3.30 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562126 TM048	28/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB1 4.00 - 4.00 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562134 TM048	28/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB1 5.20 - 5.20 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562154 TM048	27/08/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB1 8.10 - 8.10 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562164 TM048	28/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPB9 3.50 - 3.50 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562171 TM048	28/08/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR1 3.10 - 3.10 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562103 TM048	04/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR1 5.80 - 5.80 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562111 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR1 9.50 - 9.50 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562119 TM048	28/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 190821-98 **Client Reference:** **Report Number:** 521349
Location: Llanwern **Order Number:** LLA650 **Superseded Report:** 520860

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR6 3.60 - 3.60 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562084 TM048	28/08/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	CPBR6 5.60 - 5.60 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562092 TM048	28/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP102 0.50 - 0.50 SOLID 14/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20561965 TM048	27/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP102 1.50 - 1.50 SOLID 14/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562062 TM048	28/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP104 0.30 - 0.30 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562055 TM048	28/08/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP104 0.50 - 0.50 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562069 TM048	28/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP104 1.50 - 1.50 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562077 TM048	28/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP105 0.30 - 0.30 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562286 TM048	28/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP105 1.00 - 1.00 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562294 TM048	29/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG: 190821-98 **Client Reference:** **Report Number:** 521349
Location: Llanwern **Order Number:** LLA650 **Superseded Report:** 520860

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP105 1.50 - 1.50 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562301 TM048	29/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP108 0.30 - 0.30 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562348 TM048	30/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP108 1.00 - 1.00 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562356 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP108 1.50 - 1.50 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562363 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP109 0.30 - 0.30 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562478 TM048	29/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP109 0.50 - 0.50 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562485 TM048	29/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP109 1.50 - 1.50 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562493 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP111 0.30 - 0.30 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562500 TM048	28/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP111 0.50 - 0.50 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562507 TM048	28/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 190821-98 **Client Reference:** **Report Number:** 521349
Location: Llanwern **Order Number:** LLA650 **Superseded Report:** 520860

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP111 1.50 - 1.50 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562515 TM048	28/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP112 0.20 - 0.20 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562005 TM048	28/08/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP112 0.50 - 0.50 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562013 TM048	28/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP112 1.00 - 1.00 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562020 TM048	27/08/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP113 0.20 - 0.20 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562027 TM048	29/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP113 0.50 - 0.50 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562035 TM048	30/08/2019	Lucy Caroe	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP113 1.50 - 1.50 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562043 TM048	28/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP117 0.30 - 0.30 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562397 TM048	28/08/2019	Marcin Magdziarek	Debris typical of insulation material in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP117 1.00 - 1.00 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562406 TM048	28/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 190821-98 **Client Reference:** **Report Number:** 521349
Location: Llanwern **Order Number:** LLA650 **Superseded Report:** 520860

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP117 1.50 - 1.50 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562414 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP118 0.30 - 0.30 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562429 TM048	30/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP118 1.00 - 1.00 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562448 TM048	29/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP118 1.50 - 1.50 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562455 TM048	30/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP128 0.30 - 0.30 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562230 TM048	27/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP128 0.50 - 0.50 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562247 TM048	27/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP128 1.00 - 1.00 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562255 TM048	27/08/2019	James Richards	Fibre bundles in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP128 1.50 - 1.50 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562263 TM048	27/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP132 0.20 - 0.20 SOLID 14/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562141 TM048	30/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

Validated

CERTIFICATE OF ANALYSIS

SDG: 190821-98 **Client Reference:** **Report Number:** 521349
Location: Llanwern **Order Number:** LLA650 **Superseded Report:** 520860

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP132 0.50 - 0.50 SOLID 14/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562238 TM048	30/08/2019	Marcin Magdziarek	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP132 1.20 - 1.20 SOLID 14/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562327 TM048	30/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP132 2.40 - 2.40 SOLID 14/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562422 TM048	02/09/19	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP133 0.30 - 0.30 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562310 TM048	29/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP133 1.00 - 1.00 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562318 TM048	29/08/2019	Lucy Caroe	Soil containing ACM debris	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP133 1.50 - 1.50 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562337 TM048	29/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP137 0.30 - 0.30 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562374 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP137 0.50 - 0.50 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562381 TM048	30/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP137 1.50 - 1.50 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562389 TM048	04/09/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

CERTIFICATE OF ANALYSIS

SDG: 190821-98 **Client Reference:** **Report Number:** 521349
Location: Llanwern **Order Number:** LLA650 **Superseded Report:** 520860

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP140 0.30 - 0.30 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20561981 TM048	30/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP140 1.00 - 1.00 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20561988 TM048	30/08/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP140 1.80 - 1.80 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20561996 TM048	03/09/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP101 0.30 - 0.30 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562179 TM048	27/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP101 0.50 - 0.50 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562187 TM048	28/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP102 0.30 - 0.50 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562195 TM048	28/08/2019	Lucy Caroe	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP102 0.50 - 0.50 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562206 TM048	28/08/2019	Marcin Magdziarek	Debris typical of insulation material in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP103 0.30 - 0.30 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562270 TM048	29/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP103 0.50 - 0.50 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562278 TM048	29/08/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP106 0.30 - 0.30 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562213 TM048	27/08/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP106 0.50 - 0.50 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562222 TM048	27/08/2019	Barbara Urbanek-Walsh	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP107 0.30 - 0.30 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562463 TM048	29/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP107 0.50 - 0.50 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562471 TM048	30/08/2019	Agnieszka Chelmowska	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Asbestos Quantification - Full

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&+$@	Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP113 0.50 - 0.50 SOLID 15/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562035 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP117 0.30 - 0.30 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562397 TM304	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP128 1.00 - 1.00 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562255 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP132 0.50 - 0.50 SOLID 14/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562238 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	TPBP133 1.00 - 1.00 SOLID 19/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562318 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP102 0.30 - 0.50 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562195 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP102 0.50 - 0.50 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562206 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	WSBP106 0.50 - 0.50 SOLID 16/08/2019 00:00:00 21/08/2019 16:55:00 190821-98 20562222 TM304	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.26
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20561965
Sampled Date	14-Aug-2019
Customer Sample Ref.	TPBP102
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000111	<0.00001	0.000111	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.011	<0.01	0.11	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0013	<0.0005	0.013	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00107	<0.0003	0.0107	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00075	<0.0004	0.0075	<0.004	-	-	-
Selenium	0.00286	<0.001	0.0286	<0.01	-	-	-
Vanadium	0.0914	<0.001	0.914	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000195	<0.00001	0.00195	<0.0001	-	-	-
Acenaphthene by GCMS	0.000925	<0.000005	0.00925	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000116	<0.000005	0.000116	<0.00005	-	-	-
Fluoranthene by GCMS	0.000133	<0.000005	0.00133	<0.00005	-	-	-
Anthracene by GCMS	0.0000242	<0.000005	0.000242	<0.00005	-	-	-
Phenanthrene by GCMS	0.000354	<0.000005	0.00354	<0.00005	-	-	-
Fluorene by GCMS	0.0000936	<0.000005	0.000936	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000943	<0.000005	0.000943	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	9.72
Conductivity (µS/cm)	2,290.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

13/09/2019 10:38:54

10:37:50 13/09/2019

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.26
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20561965
Sampled Date	14-Aug-2019
Customer Sample Ref.	TPBP102
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00183	<0.000082	0.0183	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	9.72
Conductivity (µS/cm)	2,290.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20561981
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP140
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0128	<0.01	0.128	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0067	<0.0005	0.067	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00198	<0.0003	0.0198	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000521	<0.0004	0.00521	<0.004	-	-	-
Selenium	0.00797	<0.001	0.0797	<0.01	-	-	-
Vanadium	0.052	<0.001	0.52	<0.01	-	-	-
Zinc	0.00177	<0.001	0.0177	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000574	<0.00001	0.000574	<0.0001	-	-	-
Acenaphthene by GCMS	0.000543	<0.000005	0.00543	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000356	<0.000005	0.000356	<0.00005	-	-	-
Fluoranthene by GCMS	0.00226	<0.000005	0.0226	<0.00005	-	-	-
Anthracene by GCMS	0.000423	<0.000005	0.00423	<0.00005	-	-	-
Phenanthrene by GCMS	0.000982	<0.000005	0.00982	<0.00005	-	-	-
Fluorene by GCMS	0.000375	<0.000005	0.00375	<0.00005	-	-	-
Chrysene by GCMS	0.000311	<0.000005	0.00311	<0.00005	-	-	-
Pyrene by GCMS	0.00185	<0.000005	0.0185	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000268	<0.000005	0.00268	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000318	<0.000005	0.00318	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.000113	<0.000005	0.00113	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000201	<0.000002	0.00201	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000315	<0.000005	0.000315	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000172	<0.000005	0.00172	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.000126	<0.000005	0.00126	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	9.03
Conductivity (µS/cm)	226.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20561981
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP140
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00807	<0.000082	0.0807	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	9.03
Conductivity (µS/cm)	226.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20561988
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP140
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0109	<0.01	0.109	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0029	<0.0005	0.029	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0572	<0.003	0.572	<0.03	-	-	-
Nickel	0.000782	<0.0004	0.00782	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.01	<0.001	0.1	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000118	<0.00001	0.000118	<0.0001	-	-	-
Acenaphthene by GCMS	0.000719	<0.000005	0.00719	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000422	<0.000005	0.000422	<0.00005	-	-	-
Fluoranthene by GCMS	0.000891	<0.000005	0.00891	<0.00005	-	-	-
Anthracene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000319	<0.000005	0.000319	<0.00005	-	-	-
Fluorene by GCMS	0.000227	<0.000005	0.00227	<0.00005	-	-	-
Chrysene by GCMS	0.0000333	<0.000005	0.000333	<0.00005	-	-	-
Pyrene by GCMS	0.000615	<0.000005	0.00615	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000546	<0.000005	0.000546	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000021	<0.000005	0.00021	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000893	<0.000005	0.0000893	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.000011	<0.000002	0.00011	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.40
Conductivity (µS/cm)	415.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20561988
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP140
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00278	<0.000082	0.0278	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.489	<0.05	4.89	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	0.01	<0.01	0.1	<0.1	-	-	-
Aliphatics >C8-C10	0.029	<0.01	0.29	<0.1	-	-	-
Aliphatics >C10-C12	0.192	<0.01	1.92	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.042	<0.01	0.42	<0.1	-	-	-
Aromatics >C7-C8	0.018	<0.01	0.18	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	0.066	<0.01	0.66	<0.1	-	-	-
Aromatics >EC10-EC12	0.128	<0.01	1.28	<0.1	-	-	-
Aromatics >EC12-EC16	0.014	<0.01	0.14	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.014	<0.01	0.14	<0.1	-	-	-
Benzene by GC	0.042	<0.007	0.42	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.502	<0.01	5.02	<0.1	-	-	-
Toluene by GC	0.018	<0.004	0.18	<0.04	-	-	-
Ethylbenzene by GC	0.01	<0.005	0.1	<0.05	-	-	-
m & p Xylene by GC	0.027	<0.008	0.27	<0.08	-	-	-
o Xylene by GC	0.01	<0.003	0.1	<0.03	-	-	-
Sum m&p and o Xylene by GC	0.037	<0.011	0.37	<0.11	-	-	-
Sum of BTEX by GC	0.107	<0.028	1.07	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.40
Conductivity (µS/cm)	415.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.6
Particle Size <4mm	>95%		

Case				
SDG	190821-98			
Lab Sample Number(s)	20562005			
Sampled Date	15-Aug-2019			
Customer Sample Ref.	TPBP112			
Depth (m)	0.20 - 0.20			

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00186	<0.0005	0.0186	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000966	<0.0003	0.00966	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.018	<0.003	0.18	<0.03	-	-	-
Nickel	0.000614	<0.0004	0.00614	<0.004	-	-	-
Selenium	0.00582	<0.001	0.0582	<0.01	-	-	-
Vanadium	0.0218	<0.001	0.218	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000054	<0.00001	0.00054	<0.0001	-	-	-
Acenaphthene by GCMS	0.000338	<0.000005	0.00338	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Fluoranthene by GCMS	0.000116	<0.000005	0.00116	<0.00005	-	-	-
Anthracene by GCMS	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000651	<0.000005	0.000651	<0.00005	-	-	-
Fluorene by GCMS	0.0000379	<0.000005	0.000379	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000782	<0.000005	0.000782	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000559	<0.000002	0.0000559	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.86
Conductivity (µS/cm)	1,110.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.71
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.6
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562005
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP112
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00072	<0.000082	0.0072	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.86
Conductivity (µS/cm)	1,110.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562013
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP112
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0125	<0.01	0.125	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00137	<0.0005	0.0137	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.00857	<0.003	0.0857	<0.03	-	-	-
Nickel	0.000658	<0.0004	0.00658	<0.004	-	-	-
Selenium	0.00583	<0.001	0.0583	<0.01	-	-	-
Vanadium	0.0335	<0.001	0.335	<0.01	-	-	-
Zinc	0.00556	<0.001	0.0556	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000246	<0.00001	0.000246	<0.0001	-	-	-
Acenaphthene by GCMS	0.0009	<0.000005	0.009	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000761	<0.000005	0.000761	<0.00005	-	-	-
Anthracene by GCMS	0.0000252	<0.000005	0.000252	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000907	<0.000005	0.000907	<0.00005	-	-	-
Fluorene by GCMS	0.000125	<0.000005	0.00125	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000548	<0.000005	0.000548	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	9.01
Conductivity (µS/cm)	1,390.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562013
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP112
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00131	<0.000082	0.0131	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	9.01
Conductivity (µS/cm)	1,390.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562020
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP112
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000766	<0.0005	0.00766	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000833	<0.0004	0.00833	<0.004	-	-	-
Selenium	0.00247	<0.001	0.0247	<0.01	-	-	-
Vanadium	0.0693	<0.001	0.693	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00328	<0.00001	0.0328	<0.0001	-	-	-
Acenaphthene by GCMS	0.00755	<0.000005	0.0755	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000651	<0.000005	0.000651	<0.00005	-	-	-
Fluoranthene by GCMS	0.000228	<0.000005	0.00228	<0.00005	-	-	-
Anthracene by GCMS	0.000183	<0.000005	0.00183	<0.00005	-	-	-
Phenanthrene by GCMS	0.00193	<0.000005	0.0193	<0.00005	-	-	-
Fluorene by GCMS	0.00269	<0.000005	0.0269	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.000134	<0.000005	0.00134	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	10.62
Conductivity (µS/cm)	1,120.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562020
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP112
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0161	<0.000082	0.161	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.01	<0.01	0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.014	<0.01	0.14	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	10.62
Conductivity (µS/cm)	1,120.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562027
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP113
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000135	<0.00001	0.000135	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0397	<0.01	0.397	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000565	<0.0005	0.00565	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.01	<0.006	0.1	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00755	<0.001	0.0755	<0.01	-	-	-
Copper	0.00807	<0.0003	0.0807	<0.003	-	-	-
Lead	0.000714	<0.0002	0.00714	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000833	<0.0004	0.00833	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0107	<0.001	0.107	<0.01	-	-	-
Zinc	0.00502	<0.001	0.0502	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0112	<0.00001	0.112	<0.0001	-	-	-
Acenaphthene by GCMS	0.00176	<0.000005	0.0176	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000348	<0.000005	0.000348	<0.00005	-	-	-
Fluoranthene by GCMS	0.000461	<0.000005	0.00461	<0.00005	-	-	-
Anthracene by GCMS	0.0000994	<0.000005	0.000994	<0.00005	-	-	-
Phenanthrene by GCMS	0.000924	<0.000005	0.00924	<0.00005	-	-	-
Fluorene by GCMS	0.000561	<0.000005	0.00561	<0.00005	-	-	-
Chrysene by GCMS	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Pyrene by GCMS	0.000348	<0.000005	0.00348	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	29-Aug-2019
pH (pH Units)	12.04
Conductivity (µS/cm)	1,430.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.18
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	93.3
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562027
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP113
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0154	<0.000082	0.154	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.015	<0.01	0.15	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.046	<0.01	0.46	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Aug-2019
pH (pH Units)	12.04
Conductivity (µS/cm)	1,430.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.894

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562035
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP113
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000122	<0.00001	0.000122	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0254	<0.01	0.254	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00286	<0.0005	0.0286	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00354	<0.001	0.0354	<0.01	-	-	-
Copper	0.00288	<0.0003	0.0288	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000528	<0.0004	0.00528	<0.004	-	-	-
Selenium	0.00125	<0.001	0.0125	<0.01	-	-	-
Vanadium	0.0857	<0.001	0.857	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00015	<0.00001	0.0015	<0.0001	-	-	-
Acenaphthene by GCMS	0.000109	<0.000005	0.00109	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000234	<0.000005	0.000234	<0.00005	-	-	-
Fluoranthene by GCMS	0.000192	<0.000005	0.00192	<0.00005	-	-	-
Anthracene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Phenanthrene by GCMS	0.000162	<0.000005	0.00162	<0.00005	-	-	-
Fluorene by GCMS	0.0000379	<0.000005	0.000379	<0.00005	-	-	-
Chrysene by GCMS	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Pyrene by GCMS	0.000202	<0.000005	0.00202	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000612	<0.000005	0.0000612	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000218	<0.000002	0.0000218	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	11.43
Conductivity (µS/cm)	493.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562035
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP113
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00093	<0.000082	0.0093	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	11.43
Conductivity (µS/cm)	493.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562055
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP104
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00422	<0.001	0.0422	<0.01	-	-	-
Copper	0.00123	<0.0003	0.0123	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00181	<0.001	0.0181	<0.01	-	-	-
Vanadium	0.0752	<0.001	0.752	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000713	<0.000005	0.000713	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000593	<0.000005	0.0000593	<0.00005	-	-	-
Fluoranthene by GCMS	0.000148	<0.000005	0.00148	<0.00005	-	-	-
Anthracene by GCMS	0.0000177	<0.000005	0.000177	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.00000666	<0.000005	0.0000666	<0.00005	-	-	-
Pyrene by GCMS	0.000173	<0.000005	0.00173	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000668	<0.000005	0.0000668	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	11.16
Conductivity (µS/cm)	400.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	10.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.7
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562055
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP104
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000441	<0.000082	0.00441	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	11.16
Conductivity (µS/cm)	400.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562069
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP104
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000138	<0.00001	0.000138	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0553	<0.01	0.553	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00368	<0.001	0.0368	<0.01	-	-	-
Copper	0.00199	<0.0003	0.0199	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000487	<0.0004	0.00487	<0.004	-	-	-
Selenium	0.00154	<0.001	0.0154	<0.01	-	-	-
Vanadium	0.00971	<0.001	0.0971	<0.01	-	-	-
Zinc	0.00258	<0.001	0.0258	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000217	<0.00001	0.00217	<0.0001	-	-	-
Acenaphthene by GCMS	0.000252	<0.000005	0.00252	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000542	<0.000005	0.0000542	<0.00005	-	-	-
Fluoranthene by GCMS	0.000337	<0.000005	0.00337	<0.00005	-	-	-
Anthracene by GCMS	0.0000503	<0.000005	0.000503	<0.00005	-	-	-
Phenanthrene by GCMS	0.000473	<0.000005	0.00473	<0.00005	-	-	-
Fluorene by GCMS	0.0000484	<0.000005	0.000484	<0.00005	-	-	-
Chrysene by GCMS	0.0000313	<0.000005	0.000313	<0.00005	-	-	-
Pyrene by GCMS	0.000306	<0.000005	0.00306	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	29-Aug-2019
pH (pH Units)	11.34
Conductivity (µS/cm)	1,040.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562069
Sampled Date	15-Aug-2019
Customer Sample Ref.	TPBP104
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00172	<0.000082	0.0172	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.074	<0.05	0.74	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.033	<0.01	0.33	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.022	<0.01	0.22	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.073	<0.01	0.73	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Aug-2019
pH (pH Units)	11.34
Conductivity (µS/cm)	1,040.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.196	**Natural Moisture Content (%)**	117
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	46
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562084
Sampled Date	15-Aug-2019
Customer Sample Ref.	CPBR6
Depth (m)	3.60 - 3.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	2.2	<0.01	22	<0.1	-	-	-
Total Cyanide (W)	0.11	<0.05	1.1	<0.5	-	-	-
Arsenic	0.00176	<0.0005	0.0176	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00543	<0.0003	0.0543	<0.003	-	-	-
Lead	0.00024	<0.0002	0.0024	<0.002	-	-	-
Manganese	0.0151	<0.003	0.151	<0.03	-	-	-
Nickel	0.00104	<0.0004	0.0104	<0.004	-	-	-
Selenium	0.0025	<0.001	0.025	<0.01	-	-	-
Vanadium	0.00502	<0.001	0.0502	<0.01	-	-	-
Zinc	0.00134	<0.001	0.0134	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.102	<0.019	1.02	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.80
Conductivity (µS/cm)	796.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.795

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.196	**Natural Moisture Content (%)**	117
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	46
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562084
Sampled Date	15-Aug-2019
Customer Sample Ref.	CPBR6
Depth (m)	3.60 - 3.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.80
Conductivity (µS/cm)	796.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.795

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.131	**Natural Moisture Content (%)**	44.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	69
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562092
Sampled Date	15-Aug-2019
Customer Sample Ref.	CPBR6
Depth (m)	5.60 - 5.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	1.35	<0.01	13.5	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00124	<0.0005	0.0124	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00277	<0.0003	0.0277	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.0342	<0.003	0.342	<0.03	-	-	-
Nickel	0.00141	<0.0004	0.0141	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00192	<0.001	0.0192	<0.01	-	-	-
Zinc	0.00191	<0.001	0.0191	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000961	<0.000005	0.0000961	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.43
Conductivity (µS/cm)	289.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.860

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.131	**Natural Moisture Content (%)**	44.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	69
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562092
Sampled Date	15-Aug-2019
Customer Sample Ref.	CPBR6
Depth (m)	5.60 - 5.60

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.43
Conductivity (µS/cm)	289.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.860

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.145	**Natural Moisture Content (%)**	61.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	62
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562103
Sampled Date	15-Aug-2019
Customer Sample Ref.	CPBR1
Depth (m)	3.10 - 3.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	4.88	<0.01	48.8	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0179	<0.0005	0.179	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	0.03	<0.002	0.3	<0.02	-	-	-
Cresols by HPLC (W)	0.01	<0.006	0.1	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.04	<0.016	0.4	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00586	<0.0003	0.0586	<0.003	-	-	-
Lead	0.00056	<0.0002	0.0056	<0.002	-	-	-
Manganese	0.00996	<0.003	0.0996	<0.03	-	-	-
Nickel	0.00335	<0.0004	0.0335	<0.004	-	-	-
Selenium	0.0016	<0.001	0.016	<0.01	-	-	-
Vanadium	0.0489	<0.001	0.489	<0.01	-	-	-
Zinc	0.00488	<0.001	0.0488	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.133	<0.019	1.33	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000201	<0.000005	0.000201	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000156	<0.000005	0.000156	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000017	<0.000005	0.00017	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000214	<0.000005	0.000214	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	8.82
Conductivity (µS/cm)	223.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.845

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.145	**Natural Moisture Content (%)**	61.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	62
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562103
Sampled Date	15-Aug-2019
Customer Sample Ref.	CPBR1
Depth (m)	3.10 - 3.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000101	<0.000082	0.00101	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	8.82
Conductivity (µS/cm)	223.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.845

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.130	**Natural Moisture Content (%)**	44.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	69
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562111
Sampled Date	15-Aug-2019
Customer Sample Ref.	CPBR1
Depth (m)	5.80 - 5.80

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	2.06	<0.01	20.6	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00252	<0.0005	0.0252	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00033	<0.0003	0.0033	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.063	<0.003	0.63	<0.03	-	-	-
Nickel	0.0015	<0.0004	0.015	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.006	<0.001	0.06	<0.01	-	-	-
Zinc	0.0135	<0.001	0.135	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000207	<0.000005	0.000207	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000133	<0.000005	0.000133	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.26
Conductivity (µS/cm)	248.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.860

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.130	**Natural Moisture Content (%)**	44.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	69
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562111
Sampled Date	15-Aug-2019
Customer Sample Ref.	CPBR1
Depth (m)	5.80 - 5.80

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.26
Conductivity (µS/cm)	248.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.860

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.115	**Natural Moisture Content (%)**	28.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	78
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562119
Sampled Date	15-Aug-2019
Customer Sample Ref.	CPBR1
Depth (m)	9.50 - 9.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.384	<0.01	3.84	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00951	<0.0005	0.0951	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00287	<0.0003	0.0287	<0.003	-	-	-
Lead	0.00025	<0.0002	0.0025	<0.002	-	-	-
Manganese	0.0188	<0.003	0.188	<0.03	-	-	-
Nickel	0.00135	<0.0004	0.0135	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0253	<0.001	0.253	<0.01	-	-	-
Zinc	0.00535	<0.001	0.0535	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.217	<0.019	2.17	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000255	<0.000005	0.000255	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000213	<0.000005	0.000213	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000199	<0.000005	0.000199	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000015	<0.000005	0.00015	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000268	<0.000002	0.0000268	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.58
Conductivity (µS/cm)	128.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.875

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.115	**Natural Moisture Content (%)**	28.2
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	78
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562119
Sampled Date	15-Aug-2019
Customer Sample Ref.	CPBR1
Depth (m)	9.50 - 9.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000103	<0.000082	0.00103	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.58
Conductivity (µS/cm)	128.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.875

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.125	**Natural Moisture Content (%)**	38.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	72
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562126
Sampled Date	16-Aug-2019
Customer Sample Ref.	CPB1
Depth (m)	3.30 - 3.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	11.2	<0.01	112	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0286	<0.0005	0.286	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	0.01	<0.008	0.1	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00327	<0.0003	0.0327	<0.003	-	-	-
Lead	0.000316	<0.0002	0.00316	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00623	<0.0004	0.0623	<0.004	-	-	-
Selenium	0.00767	<0.001	0.0767	<0.01	-	-	-
Vanadium	0.181	<0.001	1.81	<0.01	-	-	-
Zinc	0.00225	<0.001	0.0225	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0384	<0.019	0.384	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000448	<0.000005	0.000448	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000577	<0.000005	0.0000577	<0.00005	-	-	-
Fluoranthene by GCMS	0.000132	<0.000005	0.00132	<0.00005	-	-	-
Anthracene by GCMS	0.0000223	<0.000005	0.000223	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000438	<0.000005	0.000438	<0.00005	-	-	-
Fluorene by GCMS	0.000052	<0.000005	0.00052	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000803	<0.000005	0.000803	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	28-Aug-2019
pH (pH Units)	10.46
Conductivity (µS/cm)	214.00
Temperature (°C)	21.40
Volume Leachant (Litres)	0.865

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.125	**Natural Moisture Content (%)**	38.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	72
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562126
Sampled Date	16-Aug-2019
Customer Sample Ref.	CPB1
Depth (m)	3.30 - 3.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000381	<0.000082	0.00381	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	28-Aug-2019
pH (pH Units)	10.46
Conductivity (µS/cm)	214.00
Temperature (°C)	21.40
Volume Leachant (Litres)	0.865

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.214	**Natural Moisture Content (%)**	138
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	42
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562134
Sampled Date	16-Aug-2019
Customer Sample Ref.	CPB1
Depth (m)	4.00 - 4.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000118	<0.00001	0.000118	<0.0001	-	-	-
Ammoniacal Nitrogen as N	2.84	<0.01	28.4	<0.1	-	-	-
Total Cyanide (W)	0.05	<0.05	0.5	<0.5	-	-	-
Arsenic	0.0205	<0.0005	0.205	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	0.0000854	<0.00008	0.000854	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00329	<0.0003	0.0329	<0.003	-	-	-
Lead	0.0012	<0.0002	0.012	<0.002	-	-	-
Manganese	0.0349	<0.003	0.349	<0.03	-	-	-
Nickel	0.00185	<0.0004	0.0185	<0.004	-	-	-
Selenium	0.00511	<0.001	0.0511	<0.01	-	-	-
Vanadium	0.0696	<0.001	0.696	<0.01	-	-	-
Zinc	0.00374	<0.001	0.0374	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.359	<0.019	3.59	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000364	<0.000005	0.000364	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000106	<0.000005	0.00106	<0.00005	-	-	-
Anthracene by GCMS	0.0000205	<0.000005	0.000205	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000427	<0.000005	0.000427	<0.00005	-	-	-
Fluorene by GCMS	0.0000509	<0.000005	0.000509	<0.00005	-	-	-
Chrysene by GCMS	0.0000115	<0.000005	0.000115	<0.00005	-	-	-
Pyrene by GCMS	0.0000812	<0.000005	0.000812	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000212	<0.000005	0.000212	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000229	<0.000005	0.000229	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000143	<0.000002	0.000143	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000242	<0.000005	0.000242	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	28-Aug-2019
pH (pH Units)	9.08
Conductivity (µS/cm)	371.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.776

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.214	**Natural Moisture Content (%)**	138
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	42
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562134
Sampled Date	16-Aug-2019
Customer Sample Ref.	CPB1
Depth (m)	4.00 - 4.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000444	<0.000082	0.00444	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	28-Aug-2019
pH (pH Units)	9.08
Conductivity (µS/cm)	371.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.776

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562141
Sampled Date	14-Aug-2019
Customer Sample Ref.	TPBP132
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000109	<0.00001	0.000109	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0294	<0.01	0.294	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.01	<0.006	0.1	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00274	<0.001	0.0274	<0.01	-	-	-
Copper	0.0119	<0.0003	0.119	<0.003	-	-	-
Lead	0.000955	<0.0002	0.00955	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00246	<0.0004	0.0246	<0.004	-	-	-
Selenium	0.00171	<0.001	0.0171	<0.01	-	-	-
Vanadium	0.00543	<0.001	0.0543	<0.01	-	-	-
Zinc	0.00164	<0.001	0.0164	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000452	<0.00001	0.00452	<0.0001	-	-	-
Acenaphthene by GCMS	0.00146	<0.000005	0.0146	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000463	<0.000005	0.000463	<0.00005	-	-	-
Fluoranthene by GCMS	0.000948	<0.000005	0.00948	<0.00005	-	-	-
Anthracene by GCMS	0.000315	<0.000005	0.00315	<0.00005	-	-	-
Phenanthrene by GCMS	0.00214	<0.000005	0.0214	<0.00005	-	-	-
Fluorene by GCMS	0.000458	<0.000005	0.00458	<0.00005	-	-	-
Chrysene by GCMS	0.0000457	<0.000005	0.000457	<0.00005	-	-	-
Pyrene by GCMS	0.000581	<0.000005	0.00581	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000485	<0.000005	0.000485	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000741	<0.000005	0.0000741	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000417	<0.000002	0.0000417	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	11.51
Conductivity (µS/cm)	1,740.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562141
Sampled Date	14-Aug-2019
Customer Sample Ref.	TPBP132
Depth (m)	0.20 - 0.20

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00651	<0.000082	0.0651	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.015	<0.01	0.15	<0.1	-	-	-
Aromatics >EC16-EC21	0.026	<0.01	0.26	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.041	<0.01	0.41	<0.1	-	-	-
Benzene by GC	0.01	<0.007	0.1	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.055	<0.01	0.55	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	11.51
Conductivity (µS/cm)	1,740.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.129	**Natural Moisture Content (%)**	42.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	70
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562154
Sampled Date	16-Aug-2019
Customer Sample Ref.	CPB1
Depth (m)	5.20 - 5.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	2.64	<0.01	26.4	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00252	<0.0005	0.0252	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000843	<0.0003	0.00843	<0.003	-	-	-
Lead	0.000231	<0.0002	0.00231	<0.002	-	-	-
Manganese	0.0551	<0.003	0.551	<0.03	-	-	-
Nickel	0.0011	<0.0004	0.011	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00225	<0.001	0.0225	<0.01	-	-	-
Zinc	0.00198	<0.001	0.0198	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.000011	<0.000005	0.00011	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000682	<0.000005	0.000682	<0.00005	-	-	-
Anthracene by GCMS	0.00000605	<0.000005	0.0000605	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000237	<0.000005	0.000237	<0.00005	-	-	-
Fluorene by GCMS	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Chrysene by GCMS	0.00000769	<0.000005	0.0000769	<0.00005	-	-	-
Pyrene by GCMS	0.0000547	<0.000005	0.000547	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000665	<0.000005	0.0000665	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	28-Aug-2019
pH (pH Units)	8.39
Conductivity (µS/cm)	239.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.861

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.129	**Natural Moisture Content (%)**	42.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	70
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562154
Sampled Date	16-Aug-2019
Customer Sample Ref.	CPB1
Depth (m)	5.20 - 5.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000188	<0.000082	0.00188	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	28-Aug-2019
pH (pH Units)	8.39
Conductivity (µS/cm)	239.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.861

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.257	**Natural Moisture Content (%)**	186
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	35
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562164
Sampled Date	16-Aug-2019
Customer Sample Ref.	CPB1
Depth (m)	8.10 - 8.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	4.45	<0.01	44.5	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00116	<0.0005	0.0116	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00208	<0.0003	0.0208	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.369	<0.003	3.69	<0.03	-	-	-
Nickel	0.000824	<0.0004	0.00824	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.00149	<0.001	0.0149	<0.01	-	-	-
Zinc	0.00578	<0.001	0.0578	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.000034	<0.000005	0.00034	<0.00005	-	-	-
Anthracene by GCMS	0.00000638	<0.000005	0.0000638	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Fluorene by GCMS	0.00000523	<0.000005	0.0000523	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000245	<0.000005	0.000245	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.00
Conductivity (µS/cm)	928.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.733

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.257	**Natural Moisture Content (%)**	186
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	35
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562164
Sampled Date	16-Aug-2019
Customer Sample Ref.	CPB1
Depth (m)	8.10 - 8.10

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0000845	<0.000082	0.000845	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.00
Conductivity (µS/cm)	928.00
Temperature (°C)	21.80
Volume Leachant (Litres)	0.733

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.129	**Natural Moisture Content (%)**	42.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	70
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562171
Sampled Date	16-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	16.2	<0.01	162	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00731	<0.0005	0.0731	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00371	<0.001	0.0371	<0.01	-	-	-
Copper	0.0112	<0.0003	0.112	<0.003	-	-	-
Lead	0.00188	<0.0002	0.0188	<0.002	-	-	-
Manganese	0.0266	<0.003	0.266	<0.03	-	-	-
Nickel	0.0074	<0.0004	0.074	<0.004	-	-	-
Selenium	0.00246	<0.001	0.0246	<0.01	-	-	-
Vanadium	0.00605	<0.001	0.0605	<0.01	-	-	-
Zinc	0.0449	<0.001	0.449	<0.01	-	-	-
Iron (Dis.Filt) mg/l	1.58	<0.019	15.8	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Acenaphthene by GCMS	0.0000155	<0.00001	0.000155	<0.0001	-	-	-
Acenaphthylene by GCMS	0.0000158	<0.00001	0.000158	<0.0001	-	-	-
Fluoranthene by GCMS	0.00033	<0.00001	0.0033	<0.0001	-	-	-
Anthracene by GCMS	0.0000104	<0.00001	0.000104	<0.0001	-	-	-
Phenanthrene by GCMS	0.0000162	<0.00001	0.000162	<0.0001	-	-	-
Fluorene by GCMS	0.0000517	<0.00001	0.000517	<0.0001	-	-	-
Chrysene by GCMS	0.0000854	<0.00001	0.000854	<0.0001	-	-	-
Pyrene by GCMS	0.000239	<0.00001	0.00239	<0.0001	-	-	-
Benz(a)anthracene by GCMS	0.0000734	<0.00001	0.000734	<0.0001	-	-	-
Benzo(b)fluoranthene by GCMS	0.000124	<0.00001	0.00124	<0.0001	-	-	-
Benzo(k)fluoranthene by GCMS	0.000047	<0.00001	0.00047	<0.0001	-	-	-
Benzo(a)pyrene by GCMS	0.0000723	<0.000004	0.000723	<0.00004	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000105	<0.00001	0.000105	<0.0001	-	-	-
Benzo(ghi)perylene by GCMS	0.0000146	<0.00001	0.000146	<0.0001	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000328	<0.00001	0.000328	<0.0001	-	-	-

Leach Test Information

Date Prepared	29-Aug-2019
pH (pH Units)	7.75
Conductivity (µS/cm)	201.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.861

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.129	**Natural Moisture Content (%)**	42.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	70
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562171
Sampled Date	16-Aug-2019
Customer Sample Ref.	CPB9
Depth (m)	3.50 - 3.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00114	<0.000164	0.0114	<0.00164	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.062	<0.05	0.62	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.023	<0.01	0.23	<0.1	-	-	-
Aliphatics >C12-C16	<0.02	<0.02	<0.2	<0.2	-	-	-
Aliphatics >C16-C21	<0.02	<0.02	<0.2	<0.2	-	-	-
Aliphatics >C21-C35	<0.02	<0.02	<0.2	<0.2	-	-	-
Total Aliphatics >C12-C35	<0.02	<0.02	<0.2	<0.2	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.015	<0.01	0.15	<0.1	-	-	-
Aromatics >EC12-EC16	<0.02	<0.02	<0.2	<0.2	-	-	-
Aromatics >EC16-EC21	<0.02	<0.02	<0.2	<0.2	-	-	-
Aromatics >EC21-EC35	<0.02	<0.02	<0.2	<0.2	-	-	-
Total Aromatics >EC12-EC35	<0.02	<0.02	<0.2	<0.2	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.062	<0.01	0.62	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.02	<0.02	<0.2	<0.2	-	-	-

Leach Test Information

Date Prepared	29-Aug-2019
pH (pH Units)	7.75
Conductivity (µS/cm)	201.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.861

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562179
Sampled Date	16-Aug-2019
Customer Sample Ref.	WSBP101
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000504	<0.0005	0.00504	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	0.01	<0.002	0.1	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00137	<0.0003	0.0137	<0.003	-	-	-
Lead	0.00778	<0.0002	0.0778	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000913	<0.0004	0.00913	<0.004	-	-	-
Selenium	0.00159	<0.001	0.0159	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0111	<0.001	0.111	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00592	<0.00001	0.0592	<0.0001	-	-	-
Acenaphthene by GCMS	0.000923	<0.000005	0.00923	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000486	<0.000005	0.000486	<0.00005	-	-	-
Fluoranthene by GCMS	0.000797	<0.000005	0.00797	<0.00005	-	-	-
Anthracene by GCMS	0.000333	<0.000005	0.00333	<0.00005	-	-	-
Phenanthrene by GCMS	0.00332	<0.000005	0.0332	<0.00005	-	-	-
Fluorene by GCMS	0.000884	<0.000005	0.00884	<0.00005	-	-	-
Chrysene by GCMS	0.0000437	<0.000005	0.000437	<0.00005	-	-	-
Pyrene by GCMS	0.000459	<0.000005	0.00459	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000194	<0.000005	0.000194	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000117	<0.000005	0.000117	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000502	<0.000005	0.0000502	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000535	<0.000002	0.0000535	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	29-Aug-2019
pH (pH Units)	12.72
Conductivity (µS/cm)	7,040.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.38
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	95.8
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562179
Sampled Date	16-Aug-2019
Customer Sample Ref.	WSBP101
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0128	<0.000082	0.128	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.078	<0.05	0.78	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	0.01	<0.01	0.1	<0.1	-	-	-
Aliphatics >C10-C12	0.023	<0.01	0.23	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.015	<0.01	0.15	<0.1	-	-	-
Aromatics >EC12-EC16	0.025	<0.01	0.25	<0.1	-	-	-
Aromatics >EC16-EC21	0.03	<0.01	0.3	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.055	<0.01	0.55	<0.1	-	-	-
Benzene by GC	0.01	<0.007	0.1	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.133	<0.01	1.33	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Aug-2019
pH (pH Units)	12.72
Conductivity (µS/cm)	7,040.00
Temperature (°C)	22.10
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562187
Sampled Date	16-Aug-2019
Customer Sample Ref.	WSBP101
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	0.01	<0.002	0.1	<0.02	-	-	-
Cresols by HPLC (W)	0.12	<0.006	1.2	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.13	<0.016	1.3	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00039	<0.0003	0.0039	<0.003	-	-	-
Lead	0.00431	<0.0002	0.0431	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00108	<0.0004	0.0108	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0369	<0.001	0.369	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.00645	<0.00001	0.0645	<0.0001	-	-	-
Acenaphthene by GCMS	0.00101	<0.000005	0.0101	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000922	<0.000005	0.000922	<0.00005	-	-	-
Fluoranthene by GCMS	0.000859	<0.000005	0.00859	<0.00005	-	-	-
Anthracene by GCMS	0.000231	<0.000005	0.00231	<0.00005	-	-	-
Phenanthrene by GCMS	0.00353	<0.000005	0.0353	<0.00005	-	-	-
Fluorene by GCMS	0.000954	<0.000005	0.00954	<0.00005	-	-	-
Chrysene by GCMS	0.0000372	<0.000005	0.000372	<0.00005	-	-	-
Pyrene by GCMS	0.000463	<0.000005	0.00463	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000426	<0.000005	0.000426	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	29-Aug-2019
pH (pH Units)	12.10
Conductivity (µS/cm)	5,050.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.094	**Natural Moisture Content (%)**	4.17
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	96
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562187
Sampled Date	16-Aug-2019
Customer Sample Ref.	WSBP101
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0137	<0.000082	0.137	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	0.083	<0.05	0.83	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	0.011	<0.01	0.11	<0.1	-	-	-
Aliphatics >C10-C12	0.024	<0.01	0.24	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	0.016	<0.01	0.16	<0.1	-	-	-
Aromatics >EC12-EC16	0.025	<0.01	0.25	<0.1	-	-	-
Aromatics >EC16-EC21	0.024	<0.01	0.24	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.049	<0.01	0.49	<0.1	-	-	-
Benzene by GC	0.011	<0.007	0.11	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.131	<0.01	1.31	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Aug-2019
pH (pH Units)	12.10
Conductivity (µS/cm)	5,050.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.896

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562195
Sampled Date	16-Aug-2019
Customer Sample Ref.	WSBP102
Depth (m)	0.30 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000126	<0.00001	0.000126	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0119	<0.01	0.119	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00313	<0.0005	0.0313	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00493	<0.001	0.0493	<0.01	-	-	-
Copper	0.000955	<0.0003	0.00955	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00223	<0.001	0.0223	<0.01	-	-	-
Vanadium	0.0565	<0.001	0.565	<0.01	-	-	-
Zinc	0.00182	<0.001	0.0182	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000294	<0.00001	0.000294	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000132	<0.000005	0.000132	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000173	<0.000005	0.000173	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000113	<0.000005	0.000113	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000606	<0.000005	0.0000606	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	10.36
Conductivity (µS/cm)	206.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.4
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562195
Sampled Date	16-Aug-2019
Customer Sample Ref.	WSBP102
Depth (m)	0.30 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	10.36
Conductivity (µS/cm)	206.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562206
Sampled Date	16-Aug-2019
Customer Sample Ref.	WSBP102
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.000012	<0.00001	0.00012	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0121	<0.01	0.121	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00595	<0.0005	0.0595	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.013	<0.001	0.13	<0.01	-	-	-
Copper	0.000862	<0.0003	0.00862	<0.003	-	-	-
Lead	0.000364	<0.0002	0.00364	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00228	<0.001	0.0228	<0.01	-	-	-
Vanadium	0.0721	<0.001	0.721	<0.01	-	-	-
Zinc	0.00124	<0.001	0.0124	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.507	<0.019	5.07	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000183	<0.00001	0.000183	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000541	<0.000005	0.0000541	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000372	<0.000005	0.000372	<0.00005	-	-	-
Anthracene by GCMS	0.00000648	<0.000005	0.0000648	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000288	<0.000005	0.000288	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000187	<0.000005	0.000187	<0.00005	-	-	-
Pyrene by GCMS	0.0000338	<0.000005	0.000338	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000378	<0.000005	0.000378	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000173	<0.000005	0.000173	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000152	<0.000002	0.000152	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.0000075	<0.000005	0.000075	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000186	<0.000005	0.000186	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	10.04
Conductivity (µS/cm)	132.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562206
Sampled Date	16-Aug-2019
Customer Sample Ref.	WSBP102
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00026	<0.000082	0.0026	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	10.04
Conductivity (µS/cm)	132.00
Temperature (°C)	22.00
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562213
Sampled Date	16-Aug-2019
Customer Sample Ref.	WSBP106
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0135	<0.01	0.135	<0.1	-	-	-
Total Cyanide (W)	0.06	<0.05	0.6	<0.5	-	-	-
Arsenic	0.0094	<0.0005	0.094	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.03	<0.006	0.3	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.03	<0.016	0.3	<0.16	-	-	-
Chromium	0.00519	<0.001	0.0519	<0.01	-	-	-
Copper	0.000735	<0.0003	0.00735	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00464	<0.001	0.0464	<0.01	-	-	-
Vanadium	0.0977	<0.001	0.977	<0.01	-	-	-
Zinc	0.00185	<0.001	0.0185	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.281	<0.019	2.81	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000157	<0.00001	0.000157	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000358	<0.000005	0.000358	<0.00005	-	-	-
Anthracene by GCMS	0.00000564	<0.000005	0.0000564	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000249	<0.000005	0.000249	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000261	<0.000005	0.000261	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000505	<0.000005	0.0000505	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000458	<0.000002	0.0000458	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	10.06
Conductivity (µS/cm)	170.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562213
Sampled Date	16-Aug-2019
Customer Sample Ref.	WSBP106
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00013	<0.000082	0.0013	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	10.06
Conductivity (µS/cm)	170.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates
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Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562222
Sampled Date	16-Aug-2019
Customer Sample Ref.	WSBP106
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0169	<0.01	0.169	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00803	<0.0005	0.0803	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00234	<0.001	0.0234	<0.01	-	-	-
Copper	0.00183	<0.0003	0.0183	<0.003	-	-	-
Lead	0.000294	<0.0002	0.00294	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00289	<0.001	0.0289	<0.01	-	-	-
Vanadium	0.0365	<0.001	0.365	<0.01	-	-	-
Zinc	0.00105	<0.001	0.0105	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.332	<0.019	3.32	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000572	<0.000005	0.000572	<0.00005	-	-	-
Anthracene by GCMS	0.0000103	<0.000005	0.000103	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000297	<0.000005	0.000297	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000211	<0.000005	0.000211	<0.00005	-	-	-
Pyrene by GCMS	0.00004	<0.000005	0.0004	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000357	<0.000005	0.000357	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000148	<0.000005	0.000148	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000162	<0.000002	0.000162	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000128	<0.000005	0.000128	<0.00005	-	-	-

Leach Test Information

Date Prepared	29-Aug-2019
pH (pH Units)	8.56
Conductivity (µS/cm)	161.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.102	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562222
Sampled Date	16-Aug-2019
Customer Sample Ref.	WSBP106
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000238	<0.000082	0.00238	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	29-Aug-2019
pH (pH Units)	8.56
Conductivity (µS/cm)	161.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562230
Sampled Date	16-Aug-2019
Customer Sample Ref.	TPBP128
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0179	<0.01	0.179	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00721	<0.0005	0.0721	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00523	<0.0003	0.0523	<0.003	-	-	-
Lead	0.000354	<0.0002	0.00354	<0.002	-	-	-
Manganese	0.00387	<0.003	0.0387	<0.03	-	-	-
Nickel	0.000913	<0.0004	0.00913	<0.004	-	-	-
Selenium	0.00245	<0.001	0.0245	<0.01	-	-	-
Vanadium	0.0343	<0.001	0.343	<0.01	-	-	-
Zinc	0.00651	<0.001	0.0651	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000543	<0.000005	0.0000543	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000703	<0.000005	0.0000703	<0.00005	-	-	-
Fluoranthene by GCMS	0.000054	<0.000005	0.00054	<0.00005	-	-	-
Anthracene by GCMS	0.0000141	<0.000005	0.000141	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000277	<0.000005	0.000277	<0.00005	-	-	-
Fluorene by GCMS	0.00000554	<0.000005	0.0000554	<0.00005	-	-	-
Chrysene by GCMS	0.0000309	<0.000005	0.000309	<0.00005	-	-	-
Pyrene by GCMS	0.0000437	<0.000005	0.000437	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000254	<0.000005	0.000254	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000325	<0.000005	0.000325	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000146	<0.000002	0.000146	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000213	<0.000005	0.000213	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000112	<0.000005	0.000112	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	9.07
Conductivity (µS/cm)	180.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562230
Sampled Date	16-Aug-2019
Customer Sample Ref.	TPBP128
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00031	<0.000082	0.0031	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	9.07
Conductivity (µS/cm)	180.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562238
Sampled Date	14-Aug-2019
Customer Sample Ref.	TPBP132
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0172	<0.01	0.172	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.02	<0.006	0.2	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	0.02	<0.016	0.2	<0.16	-	-	-
Chromium	0.00256	<0.001	0.0256	<0.01	-	-	-
Copper	0.0142	<0.0003	0.142	<0.003	-	-	-
Lead	0.000278	<0.0002	0.00278	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00302	<0.0004	0.0302	<0.004	-	-	-
Selenium	0.00178	<0.001	0.0178	<0.01	-	-	-
Vanadium	0.00404	<0.001	0.0404	<0.01	-	-	-
Zinc	0.00196	<0.001	0.0196	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000341	<0.00001	0.00341	<0.0001	-	-	-
Acenaphthene by GCMS	0.0017	<0.000005	0.017	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000511	<0.000005	0.000511	<0.00005	-	-	-
Fluoranthene by GCMS	0.00112	<0.000005	0.0112	<0.00005	-	-	-
Anthracene by GCMS	0.00054	<0.000005	0.0054	<0.00005	-	-	-
Phenanthrene by GCMS	0.00303	<0.000005	0.0303	<0.00005	-	-	-
Fluorene by GCMS	0.000652	<0.000005	0.00652	<0.00005	-	-	-
Chrysene by GCMS	0.0000615	<0.000005	0.000615	<0.00005	-	-	-
Pyrene by GCMS	0.000726	<0.000005	0.00726	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000546	<0.000005	0.000546	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00000903	<0.000005	0.0000903	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000481	<0.000002	0.0000481	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	12.02
Conductivity (µS/cm)	1,500.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	10.7
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90.3
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562238
Sampled Date	14-Aug-2019
Customer Sample Ref.	TPBP132
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00829	<0.000082	0.0829	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.011	<0.01	0.11	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.017	<0.01	0.17	<0.1	-	-	-
Aromatics >EC16-EC21	0.036	<0.01	0.36	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.053	<0.01	0.53	<0.1	-	-	-
Benzene by GC	0.011	<0.007	0.11	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.068	<0.01	0.68	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	12.02
Conductivity (µS/cm)	1,500.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562247
Sampled Date	16-Aug-2019
Customer Sample Ref.	TPBP128
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000244	<0.00001	0.000244	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0157	<0.01	0.157	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0087	<0.0005	0.087	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00152	<0.001	0.0152	<0.01	-	-	-
Copper	0.00146	<0.0003	0.0146	<0.003	-	-	-
Lead	0.00036	<0.0002	0.0036	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000523	<0.0004	0.00523	<0.004	-	-	-
Selenium	0.00254	<0.001	0.0254	<0.01	-	-	-
Vanadium	0.0282	<0.001	0.282	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.434	<0.019	4.34	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000681	<0.000005	0.000681	<0.00005	-	-	-
Anthracene by GCMS	0.00000876	<0.000005	0.0000876	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000332	<0.000005	0.000332	<0.00005	-	-	-
Fluorene by GCMS	0.00000554	<0.000005	0.0000554	<0.00005	-	-	-
Chrysene by GCMS	0.0000374	<0.000005	0.000374	<0.00005	-	-	-
Pyrene by GCMS	0.0000488	<0.000005	0.000488	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000085	<0.000005	0.000085	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000475	<0.000005	0.000475	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000235	<0.000005	0.000235	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000216	<0.000002	0.000216	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000803	<0.000005	0.0000803	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000222	<0.000005	0.000222	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	7.99
Conductivity (µS/cm)	150.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562247
Sampled Date	16-Aug-2019
Customer Sample Ref.	TPBP128
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000333	<0.000082	0.00333	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	7.99
Conductivity (µS/cm)	150.00
Temperature (°C)	22.20
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562255
Sampled Date	16-Aug-2019
Customer Sample Ref.	TPBP128
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.02	<0.01	0.2	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00806	<0.0005	0.0806	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.01	<0.006	0.1	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00149	<0.001	0.0149	<0.01	-	-	-
Copper	0.00305	<0.0003	0.0305	<0.003	-	-	-
Lead	0.000426	<0.0002	0.00426	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000562	<0.0004	0.00562	<0.004	-	-	-
Selenium	0.00285	<0.001	0.0285	<0.01	-	-	-
Vanadium	0.0255	<0.001	0.255	<0.01	-	-	-
Zinc	0.00307	<0.001	0.0307	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.661	<0.019	6.61	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000628	<0.000005	0.000628	<0.00005	-	-	-
Anthracene by GCMS	0.00000956	<0.000005	0.0000956	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000343	<0.000005	0.000343	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	0.0000319	<0.000005	0.000319	<0.00005	-	-	-
Pyrene by GCMS	0.000045	<0.000005	0.00045	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000134	<0.000005	0.000134	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000403	<0.000005	0.000403	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000132	<0.000005	0.000132	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000178	<0.000002	0.000178	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000714	<0.000005	0.0000714	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.00000709	<0.000005	0.0000709	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000198	<0.000005	0.000198	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.43
Conductivity (µS/cm)	153.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562255
Sampled Date	16-Aug-2019
Customer Sample Ref.	TPBP128
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000302	<0.000082	0.00302	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.43
Conductivity (µS/cm)	153.00
Temperature (°C)	22.40
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562270
Sampled Date	19-Aug-2019
Customer Sample Ref.	WSBP103
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.00003	<0.00001	0.0003	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0101	<0.01	0.101	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000505	<0.0005	0.00505	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00155	<0.001	0.0155	<0.01	-	-	-
Copper	0.0013	<0.0003	0.013	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00502	<0.001	0.0502	<0.01	-	-	-
Vanadium	0.0697	<0.001	0.697	<0.01	-	-	-
Zinc	0.00131	<0.001	0.0131	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000132	<0.000005	0.000132	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	0.00000707	<0.000005	0.0000707	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000772	<0.000005	0.0000772	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000396	<0.000005	0.000396	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	10.36
Conductivity (µS/cm)	252.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.34
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.3
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562270
Sampled Date	19-Aug-2019
Customer Sample Ref.	WSBP103
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	10.36
Conductivity (µS/cm)	252.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.892

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562278
Sampled Date	19-Aug-2019
Customer Sample Ref.	WSBP103
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000691	<0.0005	0.00691	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00121	<0.001	0.0121	<0.01	-	-	-
Copper	0.00101	<0.0003	0.0101	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00496	<0.001	0.0496	<0.01	-	-	-
Vanadium	0.0621	<0.001	0.621	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000162	<0.00001	0.000162	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000155	<0.000005	0.000155	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00000579	<0.000005	0.0000579	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000366	<0.000005	0.000366	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	10.42
Conductivity (µS/cm)	211.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	7.64
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.9
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562278
Sampled Date	19-Aug-2019
Customer Sample Ref.	WSBP103
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	10.42
Conductivity (µS/cm)	211.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562286
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP105
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0128	<0.01	0.128	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00257	<0.0005	0.0257	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0108	<0.001	0.108	<0.01	-	-	-
Copper	0.00219	<0.0003	0.0219	<0.003	-	-	-
Lead	0.000423	<0.0002	0.00423	<0.002	-	-	-
Manganese	0.00828	<0.003	0.0828	<0.03	-	-	-
Nickel	0.00141	<0.0004	0.0141	<0.004	-	-	-
Selenium	0.00311	<0.001	0.0311	<0.01	-	-	-
Vanadium	0.0695	<0.001	0.695	<0.01	-	-	-
Zinc	0.00268	<0.001	0.0268	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.0515	<0.019	0.515	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.77
Conductivity (µS/cm)	114.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.89
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562286
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP105
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.77
Conductivity (µS/cm)	114.00
Temperature (°C)	21.90
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562294
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP105
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.022	<0.01	0.22	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0194	<0.001	0.194	<0.01	-	-	-
Copper	0.00273	<0.0003	0.0273	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00175	<0.0004	0.0175	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0184	<0.001	0.184	<0.01	-	-	-
Zinc	0.00155	<0.001	0.0155	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000827	<0.00001	0.00827	<0.0001	-	-	-
Acenaphthene by GCMS	0.000168	<0.000005	0.00168	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000864	<0.000005	0.0000864	<0.00005	-	-	-
Fluoranthene by GCMS	0.000328	<0.000005	0.00328	<0.00005	-	-	-
Anthracene by GCMS	0.0000225	<0.000005	0.000225	<0.00005	-	-	-
Phenanthrene by GCMS	0.000183	<0.000005	0.00183	<0.00005	-	-	-
Fluorene by GCMS	0.0000388	<0.000005	0.000388	<0.00005	-	-	-
Chrysene by GCMS	0.0000682	<0.000005	0.000682	<0.00005	-	-	-
Pyrene by GCMS	0.000442	<0.000005	0.00442	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000524	<0.000005	0.000524	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000135	<0.000005	0.000135	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000672	<0.000005	0.0000672	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000587	<0.000002	0.0000587	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	11.84
Conductivity (µS/cm)	963.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.097	**Natural Moisture Content (%)**	8.11
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.5
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562294
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP105
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00216	<0.000082	0.0216	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.03	<0.01	0.3	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	11.84
Conductivity (µS/cm)	963.00
Temperature (°C)	21.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562310
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP133
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0193	<0.01	0.193	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000659	<0.0005	0.00659	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00256	<0.001	0.0256	<0.01	-	-	-
Copper	0.00141	<0.0003	0.0141	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00181	<0.001	0.0181	<0.01	-	-	-
Vanadium	0.096	<0.001	0.96	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000184	<0.00001	0.000184	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000528	<0.000005	0.0000528	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000354	<0.000005	0.000354	<0.00005	-	-	-
Anthracene by GCMS	0.0000057	<0.000005	0.000057	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000274	<0.000005	0.000274	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000324	<0.000005	0.000324	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	10.18
Conductivity (µS/cm)	262.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.106	**Natural Moisture Content (%)**	17.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	85
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562310
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP133
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000125	<0.000082	0.00125	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	10.18
Conductivity (µS/cm)	262.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.884

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562318
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP133
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000216	<0.00001	0.000216	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0168	<0.01	0.168	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00933	<0.0005	0.0933	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00125	<0.001	0.0125	<0.01	-	-	-
Copper	0.00406	<0.0003	0.0406	<0.003	-	-	-
Lead	0.000329	<0.0002	0.00329	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00047	<0.0004	0.0047	<0.004	-	-	-
Selenium	0.00313	<0.001	0.0313	<0.01	-	-	-
Vanadium	0.0945	<0.001	0.945	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.285	<0.019	2.85	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000113	<0.00001	0.000113	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000051	<0.000005	0.000051	<0.00005	-	-	-
Acenaphthylene by GCMS	0.00000782	<0.000005	0.0000782	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000729	<0.000005	0.000729	<0.00005	-	-	-
Anthracene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000388	<0.000005	0.000388	<0.00005	-	-	-
Fluorene by GCMS	0.0000076	<0.000005	0.000076	<0.00005	-	-	-
Chrysene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Pyrene by GCMS	0.0000727	<0.000005	0.000727	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000292	<0.000005	0.000292	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000122	<0.000005	0.000122	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000145	<0.000002	0.000145	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.000023	<0.000005	0.00023	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	9.68
Conductivity (µS/cm)	130.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562318
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP133
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000336	<0.000082	0.00336	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	9.68
Conductivity (µS/cm)	130.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562327
Sampled Date	14-Aug-2019
Customer Sample Ref.	TPBP132
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000149	<0.00001	0.000149	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0225	<0.01	0.225	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	<0.0005	<0.0005	<0.005	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00269	<0.001	0.0269	<0.01	-	-	-
Copper	0.011	<0.0003	0.11	<0.003	-	-	-
Lead	0.000511	<0.0002	0.00511	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00211	<0.0004	0.0211	<0.004	-	-	-
Selenium	0.00164	<0.001	0.0164	<0.01	-	-	-
Vanadium	0.00779	<0.001	0.0779	<0.01	-	-	-
Zinc	0.00184	<0.001	0.0184	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000548	<0.00001	0.00548	<0.0001	-	-	-
Acenaphthene by GCMS	0.00247	<0.000005	0.0247	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000859	<0.000005	0.000859	<0.00005	-	-	-
Fluoranthene by GCMS	0.00188	<0.000005	0.0188	<0.00005	-	-	-
Anthracene by GCMS	0.000789	<0.000005	0.00789	<0.00005	-	-	-
Phenanthrene by GCMS	0.00295	<0.000005	0.0295	<0.00005	-	-	-
Fluorene by GCMS	0.0005	<0.000005	0.005	<0.00005	-	-	-
Chrysene by GCMS	0.0000843	<0.000005	0.000843	<0.00005	-	-	-
Pyrene by GCMS	0.00122	<0.000005	0.0122	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000102	<0.000005	0.00102	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000151	<0.000005	0.000151	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000564	<0.000005	0.0000564	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000861	<0.000002	0.0000861	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	12.01
Conductivity (µS/cm)	1,350.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates
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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562327
Sampled Date	14-Aug-2019
Customer Sample Ref.	TPBP132
Depth (m)	1.20 - 1.20

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0107	<0.000082	0.107	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.018	<0.01	0.18	<0.1	-	-	-
Aromatics >EC16-EC21	0.034	<0.01	0.34	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.052	<0.01	0.52	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.081	<0.01	0.81	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	12.01
Conductivity (µS/cm)	1,350.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562348
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP108
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000697	<0.00001	0.000697	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0141	<0.01	0.141	<0.1	-	-	-
Total Cyanide (W)	0.1	<0.05	1	<0.5	-	-	-
Arsenic	0.00745	<0.0005	0.0745	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00306	<0.001	0.0306	<0.01	-	-	-
Copper	0.00165	<0.0003	0.0165	<0.003	-	-	-
Lead	0.000296	<0.0002	0.00296	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.0032	<0.001	0.032	<0.01	-	-	-
Vanadium	0.0356	<0.001	0.356	<0.01	-	-	-
Zinc	0.00183	<0.001	0.0183	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.794	<0.019	7.94	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000526	<0.00001	0.000526	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000218	<0.000005	0.000218	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000171	<0.000005	0.000171	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000143	<0.000005	0.000143	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.00000506	<0.000005	0.0000506	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000175	<0.000005	0.000175	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.00000886	<0.000005	0.0000886	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000501	<0.000002	0.0000501	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000137	<0.000005	0.000137	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000768	<0.000005	0.0000768	<0.00005	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	8.29
Conductivity (µS/cm)	120.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562348
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP108
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000164	<0.000082	0.00164	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	8.29
Conductivity (µS/cm)	120.00
Temperature (°C)	18.50
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562356
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP108
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000537	<0.00001	0.000537	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0149	<0.01	0.149	<0.1	-	-	-
Total Cyanide (W)	0.09	<0.05	0.9	<0.5	-	-	-
Arsenic	0.00768	<0.0005	0.0768	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00456	<0.001	0.0456	<0.01	-	-	-
Copper	0.00266	<0.0003	0.0266	<0.003	-	-	-
Lead	0.000781	<0.0002	0.00781	<0.002	-	-	-
Manganese	0.00518	<0.003	0.0518	<0.03	-	-	-
Nickel	0.000679	<0.0004	0.00679	<0.004	-	-	-
Selenium	0.00307	<0.001	0.0307	<0.01	-	-	-
Vanadium	0.035	<0.001	0.35	<0.01	-	-	-
Zinc	0.00462	<0.001	0.0462	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.107	<0.019	1.07	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000199	<0.00001	0.000199	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000059	<0.000005	0.000059	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000301	<0.000005	0.000301	<0.00005	-	-	-
Anthracene by GCMS	0.0000051	<0.000005	0.000051	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000209	<0.000005	0.000209	<0.00005	-	-	-
Fluorene by GCMS	0.00000532	<0.000005	0.0000532	<0.00005	-	-	-
Chrysene by GCMS	0.0000165	<0.000005	0.000165	<0.00005	-	-	-
Pyrene by GCMS	0.0000218	<0.000005	0.000218	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000146	<0.000005	0.000146	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000313	<0.000005	0.000313	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000118	<0.000005	0.000118	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000999	<0.000002	0.0000999	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000215	<0.000005	0.000215	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000181	<0.000005	0.000181	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.81
Conductivity (µS/cm)	120.00
Temperature (°C)	22.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.101	**Natural Moisture Content (%)**	12.4
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	89
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562356
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP108
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000233	<0.000082	0.00233	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.81
Conductivity (µS/cm)	120.00
Temperature (°C)	22.90
Volume Leachant (Litres)	0.889

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.49
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.8
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562374
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP137
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0179	<0.01	0.179	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.0119	<0.0005	0.119	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000531	<0.0003	0.00531	<0.003	-	-	-
Lead	0.000362	<0.0002	0.00362	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00106	<0.001	0.0106	<0.01	-	-	-
Vanadium	0.0294	<0.001	0.294	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000127	<0.00001	0.000127	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000765	<0.000005	0.0000765	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	9.43
Conductivity (µS/cm)	61.80
Temperature (°C)	18.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.095	**Natural Moisture Content (%)**	5.49
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	94.8
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562374
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP137
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	9.43
Conductivity (µS/cm)	61.80
Temperature (°C)	18.60
Volume Leachant (Litres)	0.895

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562381
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP137
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0161	<0.01	0.161	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.014	<0.0005	0.14	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00138	<0.001	0.0138	<0.01	-	-	-
Copper	0.000686	<0.0003	0.00686	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00146	<0.001	0.0146	<0.01	-	-	-
Vanadium	0.0503	<0.001	0.503	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000988	<0.00001	0.000988	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000179	<0.000005	0.000179	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Fluorene by GCMS	0.00000655	<0.000005	0.0000655	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000143	<0.000005	0.000143	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.00001	<0.000005	0.0001	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000618	<0.000002	0.0000618	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	8.68
Conductivity (µS/cm)	92.90
Temperature (°C)	18.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.098	**Natural Moisture Content (%)**	8.23
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	92.4
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562381
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP137
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000171	<0.000082	0.00171	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	0.027	<0.01	0.27	<0.1	-	-	-
Aromatics >C7-C8	0.01	<0.01	0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	0.027	<0.007	0.27	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.044	<0.01	0.44	<0.1	-	-	-
Toluene by GC	0.01	<0.004	0.1	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	0.037	<0.028	0.37	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	8.68
Conductivity (µS/cm)	92.90
Temperature (°C)	18.70
Volume Leachant (Litres)	0.893

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562397
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP117
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000619	<0.00001	0.000619	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.018	<0.01	0.18	<0.1	-	-	-
Total Cyanide (W)	0.09	<0.05	0.9	<0.5	-	-	-
Arsenic	0.00945	<0.0005	0.0945	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00495	<0.001	0.0495	<0.01	-	-	-
Copper	0.00517	<0.0003	0.0517	<0.003	-	-	-
Lead	0.000878	<0.0002	0.00878	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.00052	<0.0004	0.0052	<0.004	-	-	-
Selenium	0.0021	<0.001	0.021	<0.01	-	-	-
Vanadium	0.0314	<0.001	0.314	<0.01	-	-	-
Zinc	0.00139	<0.001	0.0139	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.911	<0.019	9.11	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000791	<0.00001	0.000791	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000157	<0.000005	0.000157	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000201	<0.000005	0.000201	<0.00005	-	-	-
Fluoranthene by GCMS	0.000162	<0.000005	0.00162	<0.00005	-	-	-
Anthracene by GCMS	0.0000183	<0.000005	0.000183	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000792	<0.000005	0.000792	<0.00005	-	-	-
Fluorene by GCMS	0.00000762	<0.000005	0.0000762	<0.00005	-	-	-
Chrysene by GCMS	0.0000401	<0.000005	0.000401	<0.00005	-	-	-
Pyrene by GCMS	0.000137	<0.000005	0.00137	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.000035	<0.000005	0.00035	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.000046	<0.000005	0.00046	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000195	<0.000005	0.000195	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000248	<0.000002	0.000248	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000503	<0.000005	0.000503	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000289	<0.000005	0.000289	<0.00005	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	9.00
Conductivity (µS/cm)	124.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.113	**Natural Moisture Content (%)**	25
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	80
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562397
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP117
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000763	<0.000082	0.00763	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	9.00
Conductivity (µS/cm)	124.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.878

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562406
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP117
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.000107	<0.00001	0.00107	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.103	<0.01	1.03	<0.1	-	-	-
Total Cyanide (W)	1.3	<0.05	13	<0.5	-	-	-
Arsenic	0.00374	<0.0005	0.0374	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	0.0000951	<0.00008	0.000951	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.0033	<0.001	0.033	<0.01	-	-	-
Copper	0.00884	<0.0003	0.0884	<0.003	-	-	-
Lead	0.000249	<0.0002	0.00249	<0.002	-	-	-
Manganese	0.126	<0.003	1.26	<0.03	-	-	-
Nickel	0.00413	<0.0004	0.0413	<0.004	-	-	-
Selenium	0.00406	<0.001	0.0406	<0.01	-	-	-
Vanadium	0.00568	<0.001	0.0568	<0.01	-	-	-
Zinc	0.00947	<0.001	0.0947	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.54	<0.019	5.4	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000331	<0.00001	0.000331	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000298	<0.000005	0.000298	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000348	<0.000005	0.000348	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000768	<0.000005	0.000768	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000178	<0.000005	0.000178	<0.00005	-	-	-
Fluorene by GCMS	0.0000144	<0.000005	0.000144	<0.00005	-	-	-
Chrysene by GCMS	0.0000455	<0.000005	0.000455	<0.00005	-	-	-
Pyrene by GCMS	0.0000567	<0.000005	0.000567	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000326	<0.000005	0.000326	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000895	<0.000005	0.000895	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000427	<0.000005	0.000427	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.0000377	<0.000002	0.000377	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	0.00000974	<0.000005	0.0000974	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000857	<0.000005	0.000857	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.0000512	<0.000005	0.000512	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	7.82
Conductivity (µS/cm)	323.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.110	**Natural Moisture Content (%)**	22
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	82
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562406
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP117
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000658	<0.000082	0.00658	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	0.008	<0.007	0.08	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.018	<0.01	0.18	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	7.82
Conductivity (µS/cm)	323.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.880

Mcerts Certification does not apply to leachates

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Validated

CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562429
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP118
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.000139	<0.00001	0.00139	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0408	<0.01	0.408	<0.1	-	-	-
Total Cyanide (W)	0.06	<0.05	0.6	<0.5	-	-	-
Arsenic	0.0133	<0.0005	0.133	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00222	<0.001	0.0222	<0.01	-	-	-
Copper	0.00327	<0.0003	0.0327	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	0.000413	<0.0004	0.00413	<0.004	-	-	-
Selenium	0.00216	<0.001	0.0216	<0.01	-	-	-
Vanadium	0.0443	<0.001	0.443	<0.01	-	-	-
Zinc	0.00275	<0.001	0.0275	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.413	<0.019	4.13	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000426	<0.00001	0.000426	<0.0001	-	-	-
Acenaphthene by GCMS	0.00000751	<0.000005	0.0000751	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000242	<0.000005	0.000242	<0.00005	-	-	-
Anthracene by GCMS	0.00000531	<0.000005	0.0000531	<0.00005	-	-	-
Phenanthrene by GCMS	0.000025	<0.000005	0.00025	<0.00005	-	-	-
Fluorene by GCMS	0.00000536	<0.000005	0.0000536	<0.00005	-	-	-
Chrysene by GCMS	0.0000157	<0.000005	0.000157	<0.00005	-	-	-
Pyrene by GCMS	0.0000184	<0.000005	0.000184	<0.00005	-	-	-
Benz(a)anthracene by GCMS	0.0000138	<0.000005	0.000138	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000179	<0.000005	0.000179	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000862	<0.000002	0.0000862	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000182	<0.000005	0.000182	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	0.00000722	<0.000005	0.0000722	<0.00005	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	9.73
Conductivity (µS/cm)	128.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.099	**Natural Moisture Content (%)**	9.53
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	91.3
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562429
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP118
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.00022	<0.000082	0.0022	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	9.73
Conductivity (µS/cm)	128.00
Temperature (°C)	18.30
Volume Leachant (Litres)	0.891

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562448
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP118
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0168	<0.01	0.168	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.000914	<0.0005	0.00914	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.000778	<0.0003	0.00778	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.784	<0.003	7.84	<0.03	-	-	-
Nickel	0.003	<0.0004	0.03	<0.004	-	-	-
Selenium	0.00137	<0.001	0.0137	<0.01	-	-	-
Vanadium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00208	<0.001	0.0208	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000646	<0.00001	0.000646	<0.0001	-	-	-
Acenaphthene by GCMS	0.0000104	<0.000005	0.000104	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000881	<0.000005	0.0000881	<0.00005	-	-	-
Anthracene by GCMS	0.00000757	<0.000005	0.0000757	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000511	<0.000005	0.000511	<0.00005	-	-	-
Fluorene by GCMS	0.00000744	<0.000005	0.0000744	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.00000575	<0.000005	0.0000575	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	8.10
Conductivity (µS/cm)	434.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.100	**Natural Moisture Content (%)**	11.1
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	90
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562448
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP118
Depth (m)	1.00 - 1.00

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000156	<0.000082	0.00156	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	0.01	<0.01	0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.01	<0.01	0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.01	<0.01	0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	8.10
Conductivity (µS/cm)	434.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.890

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562463
Sampled Date	19-Aug-2019
Customer Sample Ref.	WSBP107
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0173	<0.01	0.173	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00595	<0.0005	0.0595	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00701	<0.001	0.0701	<0.01	-	-	-
Copper	0.00198	<0.0003	0.0198	<0.003	-	-	-
Lead	0.00107	<0.0002	0.0107	<0.002	-	-	-
Manganese	0.00587	<0.003	0.0587	<0.03	-	-	-
Nickel	0.000415	<0.0004	0.00415	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Vanadium	0.0139	<0.001	0.139	<0.01	-	-	-
Zinc	0.00305	<0.001	0.0305	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.775	<0.019	7.75	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000111	<0.00001	0.000111	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000166	<0.000005	0.000166	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000145	<0.000005	0.000145	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	0.0000119	<0.000005	0.000119	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	0.0000061	<0.000005	0.000061	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	0.00000493	<0.000002	0.0000493	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	0.0000135	<0.000005	0.000135	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.57
Conductivity (µS/cm)	99.80
Temperature (°C)	22.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.103	**Natural Moisture Content (%)**	13.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	88
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562463
Sampled Date	19-Aug-2019
Customer Sample Ref.	WSBP107
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.0000912	<0.000082	0.000912	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	8.57
Conductivity (µS/cm)	99.80
Temperature (°C)	22.10
Volume Leachant (Litres)	0.888

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562471
Sampled Date	19-Aug-2019
Customer Sample Ref.	WSBP107
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	0.0000168	<0.00001	0.000168	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0288	<0.01	0.288	<0.1	-	-	-
Total Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Arsenic	0.00367	<0.0005	0.0367	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	0.01	<0.006	0.1	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	0.00323	<0.001	0.0323	<0.01	-	-	-
Copper	0.0011	<0.0003	0.011	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	<0.003	<0.003	<0.03	<0.03	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	0.00148	<0.001	0.0148	<0.01	-	-	-
Vanadium	0.00852	<0.001	0.0852	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.19	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000213	<0.00001	0.000213	<0.0001	-	-	-
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000114	<0.000005	0.000114	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000108	<0.000005	0.000108	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000091	<0.000005	0.000091	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	10.63
Conductivity (µS/cm)	165.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562471
Sampled Date	19-Aug-2019
Customer Sample Ref.	WSBP107
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC16-EC21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	10.63
Conductivity (µS/cm)	165.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562478
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP109
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0152	<0.01	0.152	<0.1	-	-	-
Total Cyanide (W)	0.13	<0.05	1.3	<0.5	-	-	-
Arsenic	0.00743	<0.0005	0.0743	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00309	<0.0003	0.0309	<0.003	-	-	-
Lead	<0.0002	<0.0002	<0.002	<0.002	-	-	-
Manganese	0.233	<0.003	2.33	<0.03	-	-	-
Nickel	0.00104	<0.0004	0.0104	<0.004	-	-	-
Selenium	0.00206	<0.001	0.0206	<0.01	-	-	-
Vanadium	0.0203	<0.001	0.203	<0.01	-	-	-
Zinc	<0.001	<0.001	<0.01	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.662	<0.019	6.62	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.000052	<0.00001	0.00052	<0.0001	-	-	-
Acenaphthene by GCMS	0.000048	<0.000005	0.00048	<0.00005	-	-	-
Acenaphthylene by GCMS	0.0000252	<0.000005	0.000252	<0.00005	-	-	-
Fluoranthene by GCMS	0.0000305	<0.000005	0.000305	<0.00005	-	-	-
Anthracene by GCMS	0.0000139	<0.000005	0.000139	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000168	<0.000005	0.000168	<0.00005	-	-	-
Fluorene by GCMS	0.0000373	<0.000005	0.000373	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene by GCMS	0.0000386	<0.000005	0.000386	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	7.37
Conductivity (µS/cm)	187.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.105	**Natural Moisture Content (%)**	16.3
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	86
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562478
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP109
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
PAH Spec MS - Aqueous (W)							
PAH 16 EPA Total by GCMS	0.000262	<0.000082	0.00262	<0.00082	-	-	-
TPH CWG (W)							
Surrogate Recovery	-	<0	-	<0	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.5	<0.5	-	-	-
Aliphatics C5-C6	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C6-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C8-C10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C10-C12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C12-C16	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C16-C21	<0.01	<0.01	<0.1	<0.1	-	-	-
Aliphatics >C21-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics C6-C7	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >C7-C8	<0.01	<0.01	<0.1	<0.1	-	-	-
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Aromatics >EC8 -EC10	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.1	<0.1	-	-	-
Aromatics >EC12-EC16	0.025	<0.01	0.25	<0.1	-	-	-
Aromatics >EC16-EC21	0.025	<0.01	0.25	<0.1	-	-	-
Aromatics >EC21-EC35	<0.01	<0.01	<0.1	<0.1	-	-	-
Total Aromatics >EC12-EC35	0.05	<0.01	0.5	<0.1	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.05	<0.01	0.5	<0.1	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.11	<0.11	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
Aliphatics >C16-C35	<0.01	<0.01	<0.1	<0.1	-	-	-

Leach Test Information

Date Prepared	04-Sep-2019
pH (pH Units)	7.37
Conductivity (µS/cm)	187.00
Temperature (°C)	18.40
Volume Leachant (Litres)	0.885

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190821-98	**Client Reference:**		**Report Number:**	521349
Location:	Llanwern	**Order Number:**	LLA650	**Superseded Report:**	520860

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Llanwern
Mass Sample taken (kg)	0.104	**Natural Moisture Content (%)**	14.9
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	87
Particle Size <4mm	>95%		

Case	
SDG	190821-98
Lab Sample Number(s)	20562485
Sampled Date	19-Aug-2019
Customer Sample Ref.	TPBP109
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Ammoniacal Nitrogen as N	0.0109	<0.01	0.109	<0.1	-	-	-
Total Cyanide (W)	0.07	<0.05	0.7	<0.5	-	-	-
Arsenic	0.00796	<0.0005	0.0796	<0.005	-	-	-
Free Cyanide (W)	<0.05	<0.05	<0.5	<0.5	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Cresols by HPLC (W)	<0.006	<0.006	<0.06	<0.06	-	-	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.08	<0.08	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00374	<0.0003	0.0374	<0.003	-	-	-
Lead	0.000433	<0.0002	0.00433	<0.002	-	-	-
Manganese	0.136	<0.003	1.36	<0.03	-	-	-
Nickel	0.001	<0.0004	0.01	<0.004	-	-	-
Selenium	0.00263	<0.001	0.0263	<0.01	-	-	-
Vanadium	0.0206	<0.001	0.206	<0.01	-	-	-
Zinc	0.0143	<0.001	0.143	<0.01	-	-	-
Iron (Dis.Filt) mg/l	0.639	<0.019	6.39	<0.19	-	-	-
PAH Spec MS - Aqueous (W)							
Naphthalene by GCMS	0.0000116	<0.00001	0.000116	<0.0001	-	-	-
Acenaphthene by GCMS	0.00437	<0.000005	0.0437	<0.00005	-	-	-
Acenaphthylene by GCMS	0.000341	<0.000005	0.00341	<0.00005	-	-	-
Fluoranthene by GCMS	0.00007	<0.000005	0.0007	<0.00005	-	-	-
Anthracene by GCMS	0.0000248	<0.000005	0.000248	<0.00005	-	-	-
Phenanthrene by GCMS	0.0000444	<0.000005	0.000444	<0.00005	-	-	-
Fluorene by GCMS	0.000908	<0.000005	0.00908	<0.00005	-	-	-
Chrysene by GCMS	0.00000729	<0.000005	0.0000729	<0.00005	-	-	-
Pyrene by GCMS	0.0000596	<0.000005	0.000596	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	30-Aug-2019
pH (pH Units)	7.58
Conductivity (µS/cm)	182.00
Temperature (°C)	22.30
Volume Leachant (Litres)	0.887

Mcerts Certification does not apply to leachates

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